3.9 THREATENED, ENDANGERED, AND SENSITIVE PLANTS, SPECIES OF CONCERN, AND FOREST SPECIES OF INTEREST (RARE PLANTS)

3.9.1 SCOPE OF ANALYSIS AND ANALYSIS METHODS

An evaluation of threatened, endangered, and sensitive, species, species of concern, and Forest species of interest plant species (collectively referred to as "rare plants") for the Travel Management Planning Project was conducted. The analysis area is the Bitterroot National Forest outside of Designated Wilderness. There is one federally-listed threatened plant species in the state of Montana that occurs on National Forest System lands; water howellia (*Howellia aquatilis*) was listed by the U.S. Fish and Wildlife Service on July 14, 1994. This species is not known to occur on the Bitterroot National Forest. There are no known endangered plant species on the Bitterroot National Forest, and none suspected to occur. Therefore, this analysis will focus on sensitive, Species of Concern, and Forest species of interest plants.

Sensitive plants are species, subspecies, or varieties of plants whose populations or habitat capability have current or predicted downward trends (FSM 2670.5). Species of Concern are determined by the State of Montana to be rare or threatened plants or plants with declining populations. Sensitive plants and plant Species of Concern may have a restricted range in Montana, or they may be sparsely distributed over a larger area. Plants designated as Species of Concern by the Montana Natural Heritage Program (MNHP) include species that are listed as threatened, endangered, or sensitive by Federal agencies.

The Region 1 Sensitive Plant Species List (USDA Forest Service 2011) {Project File folder 'rare plants,' Project File document RARE_PLANTS-001.pdf} identifies plants for each National Forest for which population viability is a concern. The Bitterroot National Forest currently analyzes and manages for 108 species of listed sensitive plants (USDA Forest Service 2011), and three species that are forest species of interest because of tribal interest in these plants. These 111 plants are known, suspected, or have potential to occur on the Bitterroot National Forest, due to habitat being present.

A review of the MNHP database and Bitterroot National Forest plant surveys for known locations of rare plants within the analysis area was performed. Plant surveys and inventories have been conducted by Forest Service botanists, biological technicians, private contractors, and professional and amateur botanists mostly over the past 20 years, but dating back to over 40 years.

The analysis area was also assessed for inclusion of habitat that might be suitable for other rare plant species. Since the analysis area covers so many different habitats, almost any species on the list could be found within the area. Table 3.9-1 lists the species known to occur within the analysis area based on the above review. The biological evaluation (Table 3.9-7) includes all the species on the Bitterroot National Forest Rare Plant List.

An evaluation of the possible effects from management activities was conducted for these species and their habitat. Analysis of effects on rare plant species was done using GIS mapping of known plant occurrences where they coincided with proposed designated motorized routes. The indicator used to measure impacts to rare plants is the number of motorized routes with rare plant species occurrences.

The Invasive Plants analysis (Section 3.10 of this FEIS) discusses invasive plants, since their spread into rare plant habitat is one of the main threats to species' viability. This section should be reviewed in order to fully understand the effect of invasive plants on plant diversity and habitat quality.

3.9.2 REGULATORY FRAMEWORK

The Endangered Species Act requires that the Forest Service conserve endangered and threatened species. The National Forest Management Act and Forest Service policy direct that National Forests be managed to maintain populations of all existing native plant and animal species at-or-above minimum viable population levels. A minimum viable population consists of the number of individuals adequately distributed

throughout their range necessary to perpetuate the existence of the species in natural, genetically stable, self-sustaining populations. Plant species for which population viability is a concern are identified by the Forest Service as sensitive species. This category may include federal candidates (plants being studied by the U.S. Fish and Wildlife Service for proposed listing as threatened or endangered status), or plant species proposed for listing as threatened or endangered in the Federal Register (MNHP 2009). Sensitive species can also be species that are considered rare within the state of Montana or are otherwise "Species of Concern" as determined by the Montana Natural Heritage Program. The Forest Service Manual requires that activities conducted on National Forest System lands be reviewed for possible impacts on endangered, threatened, or sensitive species (FSM 2670). The biological evaluation (BE) consists of the written narrative below and the signed table (Table 3.9-7) located in Section 3.9.4 D of this document.

3.9.3 AFFECTED ENVIRONMENT

Rare plant species known to occur in the Travel Management Planning Project analysis area are displayed in Table 3.9-1 below:

Table 3.9- 1: Rare Plants Species in the Analysis Area

Common Name	Scientific Name
Tapertip onion	*Allium acuminatum*
Small onion	*Allium parvum*
Dwarf onion	*Allium simillimum*
Candystick	*Allotropa virgate*
Greenleaf manzanita	*Arctostaphylos patula*
Sandweed	*Athysanus pusillus*
Small camas	*Camassia quamash*
Poor sedge (Idaho only)	*Carex paupercula*
Rocky Mountain paintbrush	*Castilleja covilleana*
Diamond clarkia	*Clarkia rhomboidea*
Crested shield-fern	*Dryopteris cristata*
Western boneset	*Eupatorium occidentale*
Spiny greasebush	*Glossopetalon spinescens*
Perplexed halimolobos	*Halimolobos perplexa*
Columbia lewisia	*Lewisia columbiana*
Bitterroot	*Lewisia rediviva var. rediviva*
Stalk-leaved monkeyflower	*Mimulus ampliatus*
Primrose monkeyflower	*Mimulus primuloides*
Lemhi penstemon	*Penstemon lemhiensis*
Yerba buena	*Satureja douglasii*
Idaho goldenweed	*Tonestus aberrans*
Woolly-head clover	*Trifolium eriocephalum*
Hollyleaf clover	*Trifolium gymnocarpon*

In addition, two "Forest Species of Interest" found within the analysis area, Bitterroot and Small camas are included in the table. Forest Species of Interest on the Bitterroot National Forest are those that are either tracked by the Montana Natural Heritage Program due to limited information, or are of cultural concern to the Confederated Salish and Kootenai or Nez Perce Tribes.

A. Sensitive Species

Information on the following species that are found along motorized routes within the Travel Management Planning Project analysis area for rare plants comes from the Montana Natural Heritage Program. The information includes species' habitat, distribution, and known occurrences within the state. There is little, if any, information on the distribution of these species historically, so cumulative effects are based on knowledge about habitat and similar species within the genus. More current information comes from monitoring rare plant populations for effects of management activities and wildfires. Routes where species are found are given in Tables 3.9-3, 3.9-4, 3.9-5, and 3.9-6 under Direct and Indirect Effects by Alternative.

Common clarkia (*Clarkia rhomboidea*)

Clarkia is found in dry, open ponderosa pine forest slopes with gravelly soils in the montane zone. There are 70 occurrences in Montana; one site occurs on the Bitterroot National Forest.

Crested shield fern *(Dryopteris cristata)*

Crested shield fern is found in moist-to-wet, often organic, soils at the forest margins of fens and swamps in the montane zone (MNHP 2009). It occurs throughout the southern half of Canada along most of the east coast, and the northern part of the Midwest and into Montana, Idaho, and Washington. Crested shield fern is on the periphery of its range in Montana, where there are 35 known occurrences; six on the Flathead National Forest, two on the Bitterroot National Forest, and two on the Lolo National Forest. One of the occurrences on the Bitterroot National Forest is along the edge of Dam Lake.

Green-bush (*Glossopetalon spinescens*)

Green-bush occurs on granite outcrops high up on the cliffs. There is only one occurrence in the state of Montana; this site is found on the Bitterroot National Forest.

Hollyleaf clover (*Trifolium gymnocarpon*)

Hollyleaf clover is found in grasslands, open ponderosa pine, and Douglas-fir/pinegrass habitats in the northern Rocky Mountains. It is on the periphery of its range, which is from northeastern Oregon south to northeastern California, Arizona, and New Mexico and east to Montana. Populations in the southwest are often associated with sagebrush (*Artemisia tridentata*) habitats. There are 61 populations of hollyleaf clover in Montana; 30 are on the West Fork Ranger District of the Bitterroot National Forest, with a few populations close enough to nearby dispersed campsites in the Little Blue Joint drainage to be disturbed.

Idaho goldenweed (*Tonestus aberrans*)

Goldenweed occurs in crevices of granite cliffs and outcrops in dry coniferous forests within the montane zone. The total number of occurrences for Montana is four; all of these occurrences are found on Bitterroot National Forest land.

Lemhi penstemon (*Penstemon lemhiensis*)

Lemhi penstemon is found on open, east-to-southwest facing slopes in grasslands, open ponderosa pine, or Douglas-fir stands, and often associated with big sagebrush (*Artemisia tridentata var. vasseyana*) and bitterbrush (*Purshia tridentata*). It is a regional endemic, found only in southwestern Montana and adjacent Lemhi County, Idaho. Elevations range from 3,200-8,100 feet (Elzinga 1997). There are 246 known occurrences in Montana; 67 are located on the Bitterroot National Forest. Many populations are small; only six on the Bitterroot National Forest have over 100 individuals. Lemhi penstemon may be a recently evolved hybrid, which is why it is able to occupy a variety of habitats. Spotted knapweed encroaches on most of the Lemhi penstemon sites on the Bitterroot National Forest, particularly in areas that burned in wildfires. Fire appears to be critical to Lemhi penstemon survival, which also favors weed encroachment.

Monitoring three Lemhi penstemon populations in Beaverhead County over a 6-year period demonstrates population trends are closely tied to the existence of a seed bank (Heidel and Shelly 2001). Seeds appear to remain viable for at least six years, and germination occurs during years of high moisture and disturbances such as fire. This determination concurs with recent monitoring on the Bitterroot National Forest. Botanists noted an increase in Lemhi penstemon during the wet summers of 1993 and 1995, and for three years after the wildfires of 2000, hundreds of seedlings germinated from a population that had burned during the fire (USDA Forest Service 2003c).

The MNHP ranks Lemhi penstemon as G3/S2, which means that the species is potentially at risk globally and at risk in Montana due to limited occurrences and vulnerability to extirpation. A conservation strategy for Lemhi penstemon was prepared in 1997 which lists threats to the species from grazing, mining, road maintenance and reconstruction, timber harvest, noxious weed encroachment, herbicide application, fire suppression, interaction of weed infestation and prescribed fire, and small population sizes (Elzinga 1997).

There is one population of Lemhi penstemon located along the Thunder Mountain Trail on the West Fork District. There are other populations along open roads on the West Fork District, which are included in all alternatives.

Perplexed halimolobos *(Halimolobos perplexa)*

Perplexed halimolobos is found in dry grasslands, sagebrush, and open ponderosa pine forests. It is a regional endemic found in the Salmon River drainage of Idaho and the southern most parts of the Bitterroot National Forest, near the Idaho border. There are 18 known occurrences of Perplexed halimolobos in Montana; seven are on the Bitterroot National Forest. One of these is along the Thunder Mountain Trail on the West Fork District.

Poor sedge (*Carex paupercula*)

Poor sedge is found in fens and bogs. There are 17 occurrences in Montana; one site is found on the Forest. This site in found along the Lake Como road.

Primrose monkeyflower (*Mimulus primuloides*)

Primrose monkeyflower occurs in fens, and wet meadows often dominated by Sphagnum moss in the montane and subalpine areas. There are 26 known occurrences in southwest Montana; the Bitterroot National Forest has two of those sites documented on Forest land.

Rocky mountain paintbrush (*Castilleja covilleana*)

Rocky mountain paintbrush occurs in grasslands, ponderosa pine stands, and rocky alpine habitats. There are 69 occurrences found in southwest Montana. Sixty five of those occurrences are on the Bitterroot National Forest.

Sandweed (*Athysanus pusillus*)

Sandweed is found in rocky vernally moist, shallow soils on steep slopes and cliffs in lower montane zones. There are 11 occurrences that are found within southwest Montana; eight are found on the Bitterroot National Forest.

Small onion (*Allium parvum*)

Small onion is associated with grasslands, sagebrush, and openings in ponderosa pine (*Pinus ponderosa*) stands, usually in exposed areas with sandy or gravelly soil. The greatest threat to small onion plants and habitat is spotted knapweed *(Centaurea biebersteinii {C. maculosa})* encroachment, along with other weeds like cheatgrass *(Bromus tectorum)* and sulfur cinquefoil *(Potentilla recta)* that often invade spotted knapweed infested slopes. Weeds currently encroach on small onion habitat and compete with the plants. Ultimately, this could adversely impact the viability of some small onion populations. It is likely that the small size of existing populations is from competition with spotted knapweed.

There are 82 occurrences of small onion in Montana; all but one is on the Bitterroot National Forest. The other occurrence is located on Bureau of Land Management lands near Dillon. Most of the Bitterroot National Forest populations are on the south end of the Forest on the West Fork and Sula Ranger Districts, with a few populations just to the north on the southern end of the Darby Ranger District. Populations are usually small, with less than 200 individuals. However, the area above Reimel Creek going up to Gibbons Pass contains a large metapopulation, most likely due to the extensive grassland habitat in the area. Small onion on the Bitterroot National Forest is on the periphery of its range, which extends from eastern Oregon to California, east to Idaho, Nevada, and southwest Montana. Species on the periphery of their range have often adapted to habitats different from those in the main species range, and may be important for overall species viability as environmental changes occur, such as global warming (Lesica and Allendorf 1995). Small onion is found nearby or along the Reimel-Tolan Trail and several open roads on the southern end of the Forest.

Stalk-leaved monkeyflower (*Mimulus ampliatus*)

Stalk-leaved monkeyflower is found in open seeps and vernally moist soil along slopes, cliffs and streams from the valleys to the subalpine zone. Twenty documented occurrences are found within western Montana; three of these sites are found on Bitterroot National Forest land.

Taper-tip onion (*Allium acuminatum*)

Taper-tip onion is found in dry, open forests, and grasslands in the montane zone. Populations are distributed across the western portion of Montana. There are 20 occurrences in Montana; two are found on the Bitterroot National Forest.

Western boneset (*Eupatorium occidentale*)

Western boneset occurs on rocky outcrops and talus slopes in the montane and lower subalpine zones. There are 12 occurrences of populations found within southwestern Montana; eight of those populations are found on the Bitterroot National Forest.

Woolly-head clover (*Trifolium eriocephalum*)

Woolly-head clover is found in dry ponderosa pine, Douglas-fir, or mixed conifer stands, as well as moist draws and stream terraces. It is often associated with disturbance; populations occur at campgrounds, trailheads, and along old skid trails, roads and trails. It is on the periphery of its range in Montana, occurring in southeast Washington, northeast Oregon, Idaho, and Montana. There are 19 known populations in Montana, 16 occurring on the West Fork Ranger District of the Bitterroot National Forest. Woolly-head clover is found at Fales Flat Campground and near dispersed campsites along the Watchtower Creek Road.

B. Species of Concern

Candystick (*Allotropa virgata*)

Candystick is found in deep humus of mature lodgepole stands in the montane zones. There are 176 populations of candystick occurring in the southwestern portion on Montana; fifty seven of those populations are documented on the Bitterroot National Forest.

Columbian bitterroot (*Lewisia Columbiana*)

Columbian bitterroot is found in moist rock crevices in granite along streams in the foothills and montane zones. There is one documented site on the Bitterroot National Forest.

Dwarf onion (*Allium simillimum*)

Dwarf onion occurs in moist, often gravelly soil of meadows and grasslands in the montane or lower subalpine zone. It is a regional endemic, found in central and southwest Idaho and southwest Montana.

There are six known populations in the state; four in the southern part of the Bitterroot National Forest. A couple of populations are located along the Castle Rock Trail on the West Fork Ranger District.

Greenleaf manzanita (*Arctostaphylos patula*)

Greenleaf manzanita is found in rocky soil in open coniferous forests in the montane zones. There are four occurrences within the western portion of Montana. The Bitterroot National Forest has one documented site.

Western mountain kittentails *(Synthyris missurica)*

Western mountain kittentails is associated with open forests and rocky ridges in the montane and subalpine zones. It occurs in northern California, Oregon, eastern Washington, Idaho, and western Montana. Western mountain kittentails is on the periphery of its range in Montana, with 11 occurrences known on the Bitterroot National Forest; two of these populations are found along ridgeline trails near Medicine Point Lookout.

Yerba Buena (*Satureja douglasii*)

Yerba Buena is found in partial or deep shade of moist forests in the montane zone, sometimes within second growth forests. There are 45 occurrences found within the western portion of Montana. The Bitterroot National Forest has one documented occurrence.

C. Forest Species of Interest

Bitterroot (*Lewisia rediviva var. rediviva*)

Bitterroots occur in rocky, open, dry well drained, and sparsely-vegetated soil in grasslands and valleys in montane zones. The Bitterroot National Forest has several populations on the Forest.

Small camas (*Camassia quamash*)

Small camas is found in moist areas which often dry by late spring. It is a well-known culturally-significant plant for Native Americans. Small camas is found at the Fales Flat Campground and Watchtower Trailhead on the West Fork Ranger District.

D. Rare Plant Species Excluded From Analysis

The following rare plant species not included in the Travel Management Planning Project analysis, since they are located in areas outside the analysis area, are listed in Table 3.9-2, below, along with the reason for their exclusion:

Table 3.9- 2: Rare Plant Species Not Considered in Analysis

Species	Reason for Exclusion
Acuteleaf dicranum Moss (*Dicranum acutifolium*) Northern twayblade (*Listera borealis*) Psuedocrossidium moss (*Psuedocrossidium obtusulum*) Sapphire rockcress *(Arabis fecunda)*	Restricted to calcareous soils, which are not present in the analysis area.
Idaho douglasia (*Douglasia idahoensis*)	Idaho douglasia is an alpine or subalpine species only known to occur on the Idaho side of the Bitterroot National Forest. It has never been found in Montana.
Bitterroot bladderpod *(Lesquerella humilis)* Evermann fleabane (*Erigeron evermannii*) Old man's beard (Nodobryoria subdivergens)Rough fleabane (*Erigeron asperugineus*) Storm saxifrage (*Saxifraga tempestiva*)	All of these species are alpine species within wilderness areas with no motorized routes nearby.
Bitterroot bladderpod (*Physaria humilis*)	Alpine species that are not within the analysis area.

Species	Reason for Exclusion
Discoid goldenweed (*Ericameria discoidea* var. discoidea) Old man's beard (*Nodobryoria subdivergens*) Selway coil-beaked lousewort (*Pedicularis contorta* var. *rubicunda*) Whitestem goldenbush (*Happlopappus macronema var. macronema*)	
Alpine collomia (*Collomia debilis* var. *camporum*) Bitterroot draba (*Draba daviesiae*) Elf-ear lichen (*Normandina pulchella*) Hooded ramalina lichen (*Ramalina obtusata*) Mountain holly-fern (*Polystichum scopulinum*) Muhlick's buckwheat (*Eriogonum capistratum* var. *muhlickii*) Rock tripe lichen (*Umbilicaria havaasii*)	Habitat present, but not accessible to motorized vehicles.
California false hellebore (*veratrum californicum*) Columbia onion (*Allium columbiana*) Columbia water-meal (*Wolffia columbiana*) Coville's rush (*Juncus covillei*) Giant helleborine (*Epipactis gigantea*) Guadalupe water-nymph (*Najas guadalupensis*) Heim's desmatodon moss (*Hennediella heimii*) Hydrothyria lichen (*Peltigera hydrothyrid*) Northern moonwort (*Botrychium pinnatum*) Toothcup (*Rotala ramosior*) Ute ladies'tresses (*Spiranthes diluvialis*) Water howellia (*Howellia aquatilis*) Western pearl-flower (*Heterocodon rariflorum*)	Habitats buffered from motorized use (Motorized wheeled travel for accessing dispersed campsites would be prohibited within 30 feet of any flowing stream, pond, lake, marsh, or wetland).

3.9.4 ENVIRONMENTAL CONSEQUENCES

Summer

A. Effects Common to All Action Alternatives

All action alternatives would have routes designated open to motorized vehicles which have rare plants located along them, although the miles of routes will vary by alternative. As long as vehicles stay on designated routes, rare plants and their habitat would not be adversely affected.

Motorized travel off of designated routes would generally be prohibited, with the exception for motorized wheeled access for dispersed camping, which would be restricted to corridors either 300 or 150 feet wide on either side of the center line of a designated route, depending upon the alternative, and where resource conditions would permit such use without causing unacceptable levels of damage. Allowing motorized wheeled access to dispersed campsites has the potential to directly and indirectly impact rare plants. Direct adverse impacts could occur if motorized vehicles drive over rare plant populations or suitable habitat; indirect adverse impacts could occur through the introduction or spread of invasive plants to suitable rare plant habitat.

Several dispersed campsites have known locations of rare plants nearby. Not all of the dispersed campsites on the Forest have been located and mapped; there may be other areas where rare plants are located nearby or within dispersed campsites, and it is unknown how many acres of potential invasive plant spread may be possible. Of particular concern are areas on the West Fork and Sula Ranger Districts, where the majority of rare plants are located on the Bitterroot National Forest. Populations of woolly-head clover and hollyleaf

clover occur along the Blue Joint and Little Blue Joint Roads where dispersed campsites already exist. Dispersed camping along Hughes Creek also has the potential to impact some hollyleaf clover plants and/or habitat. Other rare plants that could potentially be impacted by dispersed camping on the West Fork Ranger District include small onion, Rocky Mountain paintbrush, Lemhi penstemon, Payette penstemon, perplexed halimolobos, and dwarf purple monkeyflower.

Limiting motorized travel off of roads and trails beyond the 150 or 300 foot dispersed camping corridors will reduce the risk of spreading invasive plant species which impact rare plant species and rare plant habitat. Spreading or introducing invasive plants within the dispersed camping corridors can be reduced by cleaning vehicle undercarriages (removing all mud, dirt, and plant parts) prior to entering the area. Project design features, including public education efforts regarding the threats posed by invasive plants, and the need to clean vehicle undercarriages prior to accessing National Forest System lands, will be carried out during implementation of the Travel Management Planning Project. Additional features, including the use of emergency and standard orders to close roads, trails, and dispersed campsites which are contributing to impacts to rare plants, would also be incorporated into the project (Chapter 2, Table 2-19).

Several factors suggest a range of minor-to-moderate future increases in motorized wheeled access for dispersed camping and associated effects to rare plants. Most sites that have desirable campsite characteristics have already been established by repeated use, limiting future increases in the number of motorized routes to access them. Many of these campsites are located along roads, and have been analyzed for herbicide application in the 2003 Noxious Weed Treatment Project (USDA Forest Service 2003b). Existing dispersed sites typically have a suitable motorized access route commonly used to get to the site.

Expansion of new and existing sites is expected, but would likely be limited by terrain features including standing and down trees, large rocks, thick vegetation, water features, narrow stream canyons, and abrupt topographic changes. The Forest has a continuing program of installing barriers to limit vehicle access or gravelling defined access routes where needed to reduce streamside impacts. The Forest will continue to monitor the emergence of new dispersed camping sites that are accessed by motorized vehicles, as well as changes at existing sites. Sites where motorized access routes result in excessive effects to rare plants will be altered or closed.

The total number of sites used for dispersed camping, and associated motorized routes, is expected to increase gradually over time. Firewood cutting following beetle or fire events is expected to open up more access routes to dispersed camp sites.

The prohibition against motorized wheeled access for dispersed camping within 30 feet of any flowing stream, pond, lake, marsh, or wetland would have a beneficial effect on riparian and wetland-associated rare plants. However, there could be impacts from foot traffic or disturbance from camping adjacent to water sources to the following species: yellow lady's-slipper, giant helleborine, California false hellebore, poor sedge, crested shield-fern, primrose monkeyflower, English sundew, and three-angled threadmoss. Additionally, there should be no impacts to the following species since they are associated with rocky or vernally moist areas that are well away from any roads or unsuitable for dispersed camping: western boneset, sandweed, scalepod and western pearl-flower. There is potential, however, for impacts to occur should illegal off-route travel occur, particularly with the wetland and riparian species.

All unauthorized routes created prior to the 2001 Tri-State Decision would be closed to motorized use unless designated to remain open under one or more of the action alternatives. This will reduce the miles of open road and trail, and, therefore, the risk of introducing or spreading invasive plants. All action alternatives propose to designate 0.4 miles of an unauthorized, full-size vehicle route, while the miles of unauthorized routes proposed to be designated for ATVs and motorcycle use range from 3 to 35 miles, depending upon the alternative. Many of the unauthorized routes are narrow, in uplands, partially vegetated, and rarely used. Though these unauthorized routes are currently being used by motorized vehicles, the potential for invasive plants introduction and spread, which can have an adverse impact on

native plant diversity, and most likely, rare plant viability, could increase when they become designated routes, and the number of vehicles using them expands as users utilize the new recreation opportunities.

B. Direct and Indirect Effects

Alternative 1

Table 3.9-3 lists the routes which would have rare plants located along them, along with the species and type of motorized use.

Table 3.9- 3: Rare Plant Species Located Along Routes in Alternative 1

Trail (TR) or Road	Name	Species	Type of Use
62415	Leavens Gulch	Small onion	50” or less
374A	Hart Bench Loop	Small onion, Lemhi penstemon	Hwy legal
5626	Timber Road	Small onion	Hwy legal
(TR) 177	Warm Springs Ridge	Small onion	Motorcycle
(TR) 313.5	Frog Pond Basin area	California false hellebore	50” or less
(TR) 181	Medicine Point	Western mtn. kittentails, Candystick	Motorcycle
(TR) 601	Shook Mtn.	Western mtn. kittentails	Motorcycle
106	Bitterroot-Big Hole	Small onion , Rocky Mtn, paintbrush	Hwy legal
(TR) 106	Razorback Ridge	Candystick	Motorcycle
5630A	Troy Creek	Rocky Mtn. paintbrush	Hwy legal
13815	Took-Mud Ridge	Hollyleaf clover	50” or less
74105	Took Creek	Hollyleaf clover	50” or less
13407	Blue Joint-Coal Cr Ridge	Hollyleaf clover, Lemhi penstemon, Rocky Mtn. paintbrush	Hwy legal
74138	Coal Creek	Hollyleaf clover	50” or less
5659	North Coal	Hollyleaf clover, woolly-head clover, Small onion	Hwy legal
74146	Coal Creek	Hollyleaf clover, woolly-head clover	50” or less
74133	Little Blue Joint	Hollyleaf clover	Hwy legal
5694	Taylor Hookup	Rocky Mtn. paintbrush, Lemhi penstemon, Small onion	50” or less
13404	Northside Hughes Creek	Rocky Mtn. paintbrush	50” or less, Hwy legal
5693	Taylor Creek	Rocky Mtn. paintbrush	Hwy legal
5677	Sheep Creek	Lemhi penstemon, Rocky Mtn. paintbrush	50” or less
362	Blue Joint	Hollyleaf clover, Rocky Mtn. paintbrush, Small onion, Wolly-head clover	Hwy legal
74082	Blue Joint	Hollyleaf clover, Wolly-head clover	50” or less
1130	Little Boulder-Slate Creek	Hollyleaf clover, Rocky Mtn. paintbrush	Hwy legal
13458	Little Boulder Creek	Hollyleaf clover, Rocky Mtn. paintbrush	Hwy legal
(TR) 139	Deer Creek	Lemhi penstemon	Motorcycle
74005	Ward Cr-Wheeler Cr	Rocky Mtn. paintbrush	50” or less
5715	Ditch-Buck Creek	Rocky Mtn. paintbrush, Lemhi penstemon, small onion, Spiny greasebush, Idaho goldenweed	Hwy legal
5638	Watchtower Cr Trailhead	Woolly-head clover, small camas	Hwy legal
(TR) 184	Chrandall Creek	Candystick	Motorcycle
(TR) 510	Cross Country	Candystick	Motorcycle

Trail (TR) or Road	Name	Species	Type of Use
10007	Benson Creek	Lemhi penstemon	50” or less
1133	Slate Creek	Rocky Mtn. paintbrush, Hollyleaf clover	Hwy Legal
1136	Larry Creek	Rocky Mtn. paintbrush	Hwy Legal
1260	Gibbons Pass	Candystick	Hwy Legal
1303	Bare Cone	Wolly-head Clover	Hwy Legal
1304	French Basin	Lemhi penstemon	Hwy legal
1315	Sweeney Creek	Common clarkia	Hwy legal
1321	Smith Creek	Candystick	Hwy legal
13402	Gemmel Cr-Nelson Cr	Lemhi penstemon	50” or less
13413	Coal Creek	Wolly-head clover, Hollyleaf clover	50” or less
13436	Ditch Creek	Rocky Mtn. paintbrush	Hwy legal
13808	Little Boulder	Hollyleaf clover	50” or less
13817	Took-Mud Ridge	Hollyleaf clover	50” or less
13829	Violet Creek	Small onion	50” or less
13837	East Piquett	Small onion	50” or less
13852	Coal Creek	Hollyleaf clover	50” or less
13854	Coal Creek	Hollyleaf clover	50” or less
13862	Sheep Creek	Lemhi penstemon	50” or less
13881	One Creek	Small onion	50” or less
13886	Mine-Chandrall	Candystick	Hwy legal
1392	Burn Road	Candystick	50” or less
310	Hughes Creek	Rocky Mtn. Paintbrush, small onion, Hollyleaf clover	Hwy legal
321	N Frk Rye-Harlan Mtn	Lemhi penstemon	Hwy legal
370	Warm Springs-Laird	Small onion	Hwy legal
373	Barn Draw	Small onion	Hwy legal
374A	Hart Bench Loop	Lemhi penstemon, Small onion	Hwy legal
429	Lost Horse	Sandweed	Hwy legal
446	Robbins Gulch	Lemhi penstemon	Hwy legal
468	Nez Perce Trail	Woolly-head clover, Small onion, Rocky Mtn. Paintbrush	Hwy legal, 50” or less
49	Piquet Creek	Rocky Mtn. paintbrush	50” or less
550	Lake Como	Poor sedge, Crested shield fern	Hwy legal
5612A	Robbins Ridge	Lemhi penstemon	Hwy legal
5627	Fish Hook	Lemhi penstemon	Hwy legal
5629	Lloyd Creek	Rocky Mtn. paintbrush, Small onion	Hwy legal
5630	Lavene Creek	Small onion, Stalk-leaved monkeyflower	Hwy legal
5632	Wheeler Creek	Rocky Mtn. paintbrush	Hwy legal
5633	Gemmel Creek	Small onion	Hwy Legal
5633A	Halford-Soda Springs	Lemhi penstemon	50” or less
5635	Soda Springs	Stalk-leaved monkeyflower, wolly-head clover	Hwy legal
5637	Flat-Beetle	Rocky Mtn. paintbrush	Hwy legal
5656	Little Blue Joint	Hollyleaf clover	Hwy legal
5658	Lit. Blue Joint-Coal Cr	Wolly-head clover, Lemhi penstemon, Hollyleaf clover, Taper-tip onion	Hwy legal
5660	Coal Creek	Hollyleaf clover, Wolly-head clover	Hwy legal
5662	South Coal	Hollyleaf clover, Wolly-head clover	Hwy legal, 50” or less
5669	Woods Creek	Lemhi penstemon, Perplexed halimolobos	Hwy legal
5676	Head of West Fork	Perplexed halimolobos	50” or less
5683	Salt Creek	Greenleaf manzanita	50” or less
5685	Thunder Mtn-Johnson	Lemhi penstemon, Candystick	Hwy legal, 50” or

Trail (TR) or Road	Name	Species	Type of Use
			less
5696	Lookout Mtn Ridge	Rocky Mtn. paintbrush, Hollyleaf clover, Small onion, Lemhi penstemon	Hwy legal
5696A	Lookout Mtn	Rocky Mtn. paintbrush	Hwy legal
5706	Jew Mountain	Lemhi penstemon	All vehicles
5706A	North Side Overwhich	Rocky Mtn. paintbrush	50” or less
5719	Steep Creek	Rocky Mtn. paintbrush	50” or less
5720	Piquett-Pine Ridge	Small onion	Hwy legal
5723	Eastside Piquett	Lemhi penstemon	Hwy legal
5724	Upper Eastside Piquett	Small onion, Lemhi penstemon	Hwy legal, 50” or less
5727	Sula Peak	Small onion	Hwy legal
5734	Saddle Mountain	Primrose monkeyflower	Hwy legal
5767	Medicine Tree	Small onion	Hwy legal
5778	Paint Creek	Small onion	Hwy legal
5793	Mine-Crandall	Candystick	Hwy legal
5796	Pasture Draw	Lemhi penstemon	Hwy legal
62641	Whitsell Creek	Lemhi penstemon	50” or less
62648	Robbins Gulch	Lemhi penstemon	50” or less
62908	Little Trapper-Trapper	Lemhi penstemon	Hwy legal
66	West Fork Bitterroot	Idaho goldenweed, Green-bush, Hollyleaf clover, Rocky Mtn. Paintbrush, Lemhi penstemon	Hwy legal
66A	Alta Campground	Hollyleaf clover	Hwy legal
720	Two Bear	Candystick	Hwy legal
725	Meadow Creek	Candystick, Primrose monkeyflower	Hwy legal
731	East Piquett	Small onion	Hwy legal
73206	Sawdust Gulch	Lemhi penstemon	Hwy legal
73264	East Fork	Western boneset	50” or less
73288	Mink Creek	Western boneset	50” or less
73537	E Fk Camp Cr on Divide	Candystick	Hwy legal
73574	East Fk Flat(Wetzsteon)	Small onion	Hwy legal
73994	Lost Trail Pass	Primrose monkyflower	Hwy legal
74004	Nelson Cr-Gemmel Cr	Lemhi Penstemon	50” or less
74019	Soda Springs Creek	Small onion	50” or less
74021	Soda Springs Creek	Lemhi penstemon	50” or less
74038	Nez Perce-Watchtower	Wolly-head clover	Hwy legal
74098	Took Creek	Hollyleaf clover	50” or less
74120	Took Creek	Hollyleaf clover	50” or less
74135	Little Blue Joint	Hollyleaf clover	Hwy legal
74137	Coal Creek	Hollyleaf clover	50” or less
74139	Coal Creek	Hollyleaf clover	Hwy legal
74161	Coal Creek	Hollyleaf clover	50” or less
74166	Hughes Creek	Lemhi penstemon, Hollyleaf clover	50” or less
74167	Hughes Creek	Lemhi penstemon, Hollyleaf clover	50” or less
75	Skalkaho-Rye	Small onion	Hwy legal
91	West Fork	Lemhi penstemon, Rocky Mt. Paintbrush, Small onion	Hwy legal
(TR)-SCOP-20	Trail 104 Extension	Candystick	Motorcycles
(TR)-SCOP-46	Proposed Lookout Ridge ATV Trail	Rocky Mtn. paintbrush	Proposed 50” or less

Trail (TR) or Road	Name	Species	Type of Use
(TR)-SURD-03	Elk Pt., extends TR-SURD-05 to SW	Small onion	50” or less
Total Number of Motorized Routes With Rare Plant Occurrences			**126**

The table shows that **Alternative 1** would have 126 routes with rare plant occurrences along them. This compares to 139 routes under **Alternative 2** (Please refer to Table 3.9-4).

There are routes proposed to be added to the motorized trail/road system in **Alternative 1.** Some of these proposed routes have known rare plant locations. However, constructing new trail will increase the risk of spreading invasive plants which could adversely impact rare plant habitat, if present. New construction will be subject to separate NEPA analysis and decisions.

Alternative 1 proposes to designate 30 miles of unauthorized routes on the MVUM. About 18 miles would be proposed to be designated as ATV trails seasonally (including TR-SURD-03 in Table 3.9-3); approximately 1 mile would be designated to be open year long. Some of these routes would connect existing roads.

Approximately 10 miles of the routes proposed to be designated for ATVs would not be shown on the MVUM until separate site-specific NEPA analysis and decisions, associated with relocating the routes to more sustainable locations to address erosion concerns, are completed and they exist on the ground. One of these routes, TR-SCOP-46, is listed in Table 3.9-3.

Additionally, 11 miles of unauthorized routes would be proposed to be designated for use as motorcycle trails: 10 miles, including TR-SCOP-20 in Table 3.9-3 would be open seasonally, and 1 mile would be open yearlong {Project File folder ‘unauthorized_trails,’ Project File document UAT-003.pdf}.

For a listing of the unauthorized routes proposed to be designated on the MVUM in **Alternative 1**, please refer to Appendix K to the FEIS.

Alternative 1 would allow motorized wheeled access for dispersed camping within 300 feet on either side of the center line of a designated route; corridors would be extended to those sites identified on the maps of the alternatives.

Alternative 2 – No Action

Table 3.9-4 lists the routes which have rare plants located along them, along with the species and type of motorized use.

Table 3.9- 4: Rare Plant Species Located Along Routes in Alternative 2

Trail (TR) or Road	Name	Species	Type of Use
374A	Hart Bench Loop	Small onion, Lemhi penstemon	Hwy legal
(TR) 313.5	Frog Pond Basin area	California false hellebore	50” or less
(TR) 78	Reimel-Tolan	Small onion	Motorcycle
(TR) 181	Medicine Point	Western mtn. Kittentails, Candystick	Motorcycle
(TR) 601	Shook Mtn	Western mtn. kittentails	Motorcycle
106	Bitterroot-Big Hole	Small onion, Rocky Mtn. paintbrush	Hwy legal
(TR) 95	Thunder Mountain	Lemhi penstemon, perplexed halimolobos	Motorcycle
(TR) 627	Castle Rock (East)	Simil onion	Motorcycle
(TR) 627	Castle Rock (West)	Simil onion	Motorcycle
5630A	Troy Creek	Rocky Mtn. paintbrush	Hwy legal
13815	Took-Mud Ridge	Hollyleaf clover	50” or less

Trail (TR) or Road	Name	Species	Type of Use
74105	Took Creek	Hollyleaf clover	50” or less
13407	Blue Joint-Coal Cr Ridge	Hollyleaf clover, Lemhi penstemon, Rocky Mtn. paintbrush	Hwy legal
74138	Coal Creek	Hollyleaf clover	50” or less
5659	North Coal	Hollyleaf clover, Woolly-head clover	Hwy legal
74140	Coal Creek	Hollyleaf clover	50” or less
74146	Coal Creek	Hollyleaf clover, Woolly-head clover, Small onion	50” or less
74133	Little Blue Joint	Hollyleaf clover	Hwy legal
5694	Taylor Hookup	Rocky Mtn. Paintbrush, Small onon, Lemhi penstemon	50” or less
13404	Northside Hughes Creek	Rocky Mtn. paintbrush	50” or less
5693	Taylor Creek	Rocky Mtn. paintbrush	Hwy legal
5677	Sheep Creek	Lemhi penstemon, Rocky Mtn. paintbrush	50” or less
362	Blue Joint	Hollyleaf clover, Wooly-head clover, Small onion, Rocky Mtn. paintbrush	Hwy legal
74082	Blue Joint	Hollyleaf clover, Rocky Mtn. paintbrush	50” or less
1130	Little Boulder-Slate Creek	Hollyleaf clover, Rocky Mtn. paintbrush	Hwy legal
13458	Little Boulder Creek	Hollyleaf clover, Rocky Mtn. paintbrush	Hwy legal
66E	Borrow Pit	Rocky Mtn. paintbrush	Hwy legal
5715	Ditch-Buck Creek	Rocky Mtn. paintbrush, Lemhi penstemon, Small onion, Greenbush, Idaho goldenweed	Hwy legal
74005	Ward Cr-Wheeler Cr	Rocky Mtn. paintbrush	50” or less
5638	Watchtower Cr Trailhead	Woolly-head clover, Small camas	Hwy legal
468	Nez Perce Trail	Woolly-head clover, Small camas, Small onion	Hwy legal, 50” or less
(TR) 106	Razorback Ridge	Candystick	Motorcycles
(TR) 126	Bear Creek Overlook	Candystick	Motorcycles
(TR) 139	Deer Creek	Lemhi penstemon	Motorcycles
(TR) 142	Sheephead Creek	Rocky Mtn. Paintbrush	Motorcycles
(TR) 177	Warm Springs Ridge	Small onion	Motorcycle
(TR) 184	Chrandall Creek	Candystick	Motorcycles
(TR) 247	Boulder Point Lookout	Rocky Mtn. paintbrush	Motorcycles
(TR) 510	Cross Country	Candystick	Motorcycles
(TR) 614	Blue Joint	Candystick	Motorcycles
(TR) 9	Continental Divide NST	Primrose monkeyflower	Motorcycles
10007	Benson Creek	Lemhi penstemon	50” or less
1133	Slate Creek	Rocky Mtn. Paintbrush, Hollyleaf clover	Hwy legal
1136	Larry Creek	Rocky Mtn. paintbrush	Hwy legal
1260	Gibbons Pass	Candystick	Hwy legal
1303	Bare Cone	Wolly-head clover	Hwy legal
1304	French Basin	Lemhi penstemon	Other roads
1315	Sweeney Creek	Common clarkia	Hwy legal
1316	Lower Larry Loop	Rocky Mtn. paintbrush	Hwy legal
1321	Smith Creek	Candystick	Hwy legal
13402	Gemmel Creek-Nelson Cr	Lemhi penstemon	50” or less
13409	West Creek	Wooly-head clover	50” or less
13410	West Creek	Wooly-head clover, Hollyleaf clover	50” or less
13413	Coal Creek	Wooly-head clover, Hollyleaf clover	50” or less

Trail (TR) or Road	Name	Species	Type of Use
13422	Eastside Piquett Creek	Lemhi penstemon	50” or less
13423	Eastside Piquett Creek	Lemhi penstemon	50” or less
13430	Westside Piquett Creek	Small onion	50” or less
13436	Ditch Creek	Rocky Mtn. paintbrush	Hwy legal
13808	Little Boulder	Hollyleaf clover	50” or less
13817	Took-Mud Ridge	Hollyleaf clover	50” or less
13829	Violet Creek	Small onion	50” or less
13836	East Piquett	Small onion	50” or less
13837		Small onion	50” or less
13840	Eastside Piquett	Lemhi penstemon	50” or less
13852	Coal Creek	Hollyleaf clover	50” or less
13854	Coal Creek	Hollyleaf clover	50” or less
13862	Sheep Creek	Lemhi penstemon	50” or less
13881	One Creek	Small onion	50” or less
13886	Mine-Chrandall	Candystick	Hwy legal
1392	Burn Road	Candystick	50” or less
310	Hughes Creek	Small onion, Rocky Mtn. paintbrush	Hwy legal
321	N Frk Rye-Harla Mtn	Lemhi penstemon	Hwy legal
370	Warm Springs-Laird	Small onion	Hwy legal
373	Barn Draw	Small onion	Hwy legal
429	Lost Horse	Sandweed	Hwy legal
446	Robbins Gulch	Lemhi penstemon	Hwy legal
49	Piquet Creek	Rocky Mtn. paintbrush	50” or less
550	Lake Como	Poor sedge, Crested shield-fern	Hwy legal
5612A	Robbins Ridge	Lemhi penstemon	Hwy legal
5626	Timber Road	Small onion	Hwy legal
5627	Fish Hook	Lemhi penstemon	Hwy legal
5629	Lloyd Creek	Small onion, Rocky Mtn. paintbrush	Hwy legal
5630	Lavene Creek	Small onion, Stalk-leaved monkeyflower	Hwy legal
5632	Wheeler Creek	Rocky Mtn. paintbrush	Hwy legal
5633	Gemmel Creek	Small onion	Hwy legal
5633A	Halford-Soda Springs	Lemhi penstemon	50” or less
5635	Soda Springs	Wooly-head clover, Stalk-leaved monkeyflower	Hwy legal
5637	Flat-Beetle	Rocky Mtn. paintbrush	Hwy legal
5656	Little Blue Joint	Hollyleaf clover	Hwy legal
5658	Lit. Blue Joint-Coal Cr	Wooly-head clover	Hwy legal
5660	Coal Creek	Wooly-head clover, Hollyleaf clover	Hwy legal
5662	South Coal	Wooly-head clover, Hollyleaf clover	Hwy legal, 50” or less
5669	Woods Creek	Lemhi penstemon, Perplexed halimolobos	Hwy legal
5676	Head of West Fork	Perplexed halimolobos	50” or less
5683	Salt Creek	Greenleaf manzanita	50” or less
5685	Thunder Mtn-Johnson	Lemhi penstemon,Candystick	Hwy legal, 50” or less
5696	Lookout Mtn Ridge	Rocky Mtn. Paintbrush, Small onion, Hollyleaf clover, Lemhi penstemon	Hwy legal
5696A	Lookout Mtn	Rocky Mtn. paintbrush	Hwy legal
5706	Jew Mountain	Lemhi penstemon	All vehicles
5706A	North Side Overwhich	Rocky Mtn. paintbrush	50” or less

Trail (TR) or Road	Name	Species	Type of Use
5719	Steep Creek	Rocky Mtn. paintbrush	50” or less
5720	Piquett-Pine Ridge	Small onion	Hwy legal
5723	Eastside Piquett	Lemhi penstemon	Hwy legal
5724	Upper Eastside Piquett	Lemhi penstemon, Small onion	Hwy legal, 50” or less
5727	Sula Peak	Small onion	Hwy legal
5734	Saddle Mountain	Primrose monkeyflower	Hwy legal
5767	Medicine Tree	Small onion	Hwy legal
5778	Paint Creek	Small onion	Hwy legal
5793	Mine-Crandall	Candystick	Hwy legal
5796	Pasture Draw	Lemhi penstemon	Hwy legal
62416	Lavene Creek	Small onion	50” or less
62641	Whitsell Creek	Lemhi penstemon	50” or less
62648	Robbins Gulch	Lemhi penstemon	50” or less
62867	Little Trapper	Small onion	50” or less
62908	Little-Trapper Trapper	Lemhi penstemon	Hwy legal
62969	Lost Horse	Sandweed	Hwy legal
66	West Fork Bitterroot	Rocky Mtn. Paintbrush, Green-bush, Idaho goldenweed, Hollyleaf clover, Lemhi penstemon	Hwy legal
66A	Alta Campground	Hollyleaf clover	Hwy legal
720	Two Bear	Candystick	Hwy legal
725	Meadow Creek	Candystick, Primrose monkeyflower	Hwy legal
731	East Piquett	Small onion	Hwy legal
73206	Sawdust Gulch	Lemhi penstemon	Hwy legal
73264	East Fork	Western Boneset	50” or less
73288	Mink Creek	Western Boneset	50” or less
73537	E Fk Camp Cr on Divide	Candystick	Hwy legal
73574	East Fk Flat(Wetzsteon)	Small onion	Hwy legal
73994	Lost Trail Pass	Primrose monkeyflower	Hwy legal
74004	Nelson Cr-Gemmell Cr	Lemhi penstemon	50” or less
74019	Soda Springs Creek	Small onion	50” or less
74021	Soda Springs Creek	Lemhi penstemon	50” or less
74038	Nez Perce-Watchtower	Wooly-head clover	Hwy legal
74098	Took Creek	Hollyleaf clover	50” or less
74120	Took Creek	Hollyleaf clover	50” or less
74135	Little Blue Joint	Hollyleaf clover	Hwy legal
74139	Coal Creek	Hollyleaf clover	Hwy legal
74141	Coal Creek	Lemhi penstemon, Hollyleaf clover	50” or less
74142	Coal Creek	Hollyleaf clover	50” or less
74161	Coal Creek	Hollyleaf clover	50” or less
74166	Hughes Creek	Lemhi penstemon, Hollyleaf clover	50” or less
74167	Hughes Creek	Lemhi penstemon, Hollyleaf clover	50” or less
75	Skalkaho-Rye	Small onion	Hwy legal
91	West Fork	Rocky Mtn. Paintbrush, Small onion, Lemhi penstemon	Hwy legal
Total Number of Motorized Routes with Rare Plant Occurrences			**139**

The existing effects of roads and trails on rare plants are described in Section 3.9.3 (Affected Environment).

The table shows that **Alternative 2** would have 139 routes with rare plant occurrences along them.

Effects will be the same as for **Alternative 1**, although, as seen in the Table 3.9-4, there is slightly more motorized use in areas where rare plants occur in **Alternative 2** (139 routes compared to 126 routes in **Alternative 1**), so there is greater likelihood of adverse impacts on rare plants or rare plant habitat.

Under **Alternative 2**, all routes currently open to motorized use would remain open, including those unauthorized routes in existence prior to the 2001 Tri-State Decision. The unauthorized routes are being used by motorized vehicles, and the potential for invasive plants introduction and spread, which has had an adverse impact on native plant diversity, and most likely, rare plant viability, will continue.

Alternative 2 would not designate any unauthorized routes on the MVUM. While some trails are not recommended for ATV travel in the current Forest Plan, ATVs are permitted on all motorized trails if the route is not barricaded or signed as closed, and if the vehicle fits within the existing tread. Current management plans would continue to guide management of the project area.

As currently permitted under the 2001 Tri-State Decision, **Alternative 2** would allow motorized wheeled access for dispersed camping within 300 feet on either side of a designated route; however, corridors would not be extended as there would not be an exception for those mapped sites greater than 300 feet from a designated route as proposed in **Alternative 1**. The effects to rare plants would be similar to those described in Section 3.9.4. A (Effects Common to All Action Alternatives).

Project design features (Chapter 2, Table 2-19), including public education efforts regarding the threats posed by invasive plants, and the need to clean vehicle undercarriages prior to accessing National Forest System lands, as well as the use of emergency and standard orders to close roads, trails, and dispersed campsites which are contributing to impacts to rare plants, would be carried out during implementation of the Travel Management Planning Project.

Alternative 2 would not contain the prohibition against motorized wheeled access for dispersed camping within 30 feet of any flowing stream, pond, lake, marsh, or wetland. This could have potential impacts on riparian rare plant species such as yellow lady's-slipper, giant helleborine, California false hellebore, primrose monkeyflower, three angled threadmoss, pod grass, crested shield fern, and poor sedge, or their habitat. Project design features, including the use of emergency and standard orders to close roads, trails, and dispersed campsites which are contributing to impacts to rare plants, would be incorporated into the project.

Alternative 3

Table 3.9-5 lists the routes which have rare plants located along them, along with the species and types of motorized use.

Table 3.9- 5: Rare Plant Species Located Along Routes in Alternative 3

Trail (TR) or Road	Name	Species	Type of Use
62415	Leavens Gulch	Small onion	50" or less
374A	Hart Bench Loop	Small onion, Lemhi penstemon	Hwy legal
(TR) 313.5	Frog Pond Basin area	California false hellebore	50" or less
(TR) 4	Bass Creek	St. Marys Peak Bladder pod	Motorcycle
(TR) 78	Reimel-Tolan	Small onion	Motorcycle
(TR) 83	Continental Divide NST	Primrose Monkeyflower	Motorcycle
(TR) 95	Thunder Mountain	Lemhi penstemon, perplexed halimolobos	Motorcycle
(TR) 96	Tin Cup	Columbian Lewisia	Motorcycle
(TR) 116	St. Mary Peak	St. Marys Peak Bladder pod	Motorcycle
(TR) 139	Deer Creek	Lemhi penstemon	Motorcycle

Trail (TR) or Road	Name	Species	Type of Use
(TR) 142	Sheephead Creek	Rocky Mtn. paintbrush	Motorcycle
(TR) 181	Medicine Point	Western mountain kittentails, Candystick	Motorcycle
(TR) 247	Boulder Point Lookout	Rocky Mtn. paintbrush	Motorcycle
(TR) 392	Little St. Joe	Candystick	Motorcycle
(TR) 601	Shook Mtn	Western mtn. kittentails	Motorcycle
(TR) 627	Castle Rock (East)	Simil onion	Motorcycle
(TR) 699	Watchtower	Rocky Mtn. paintbrush, Wooly-head clover	Motorcycle
106	Bitterroot-Big Hole	Small onion	Hwy legal
5630A	Troy Creek	Rocky Mtn. paintbrush	50” or less
13815	Took-Mud Ridge	Hollyleaf clover	50” or less
74105	Took Creek	Hollyleaf clover	50” or less
13407	Blue Joint-Coal Cr Ridge	Hollyleaf clover, Lemhi penstemon, Rocky Mtn. paintbrush	Hwy legal
74138	Coal Creek	Hollyleaf clover	50” or less
74140	Coal Creek	Hollyleaf clover	50” or less
74142	Coal Creek	Hollyleaf clover	50” or less
5659	North Coal	Hollyleaf clover, Woolly-head clover	Hwy legal
74146	Coal Creek	Hollyleaf clover, Woolly-head clovers, Small onion	50” or less
74133	Little Blue Joint	Hollyleaf clover	Hwy legal
5694	Taylor Hookup	Rocky Mtn. Paintbrush, Lemhi penstemon, Small onion	50” or less
13404	Northside Hughes Creek	Rocky Mtn. paintbrush	50” or less
5693	Taylor Creek	Rocky Mtn. paintbrush	Hwy legal
5677	Sheep Creek	Lemhi penstemon, Rocky Mt. paintbrush	50” or less
362	Blue Joint	Hollyleaf clover, Wooly-head clover, Small onion, Rocky Mtn. paintbrush	Hwy legal
74082	Blue Joint	Hollyleaf clover, Wooly-head clover	50” or less
1130	Little Boulder-Slate Creek	Hollyleaf clover, Rocky Mtn. paintbrush	Hwy legal
13458	Little Boulder Creek	Hollyleaf clover, Rocky Mtn. paintbrush	Hwy legal
66E	Borrow Pit	Rocky Mtn. paintbrush	Hwy legal
5715	Ditch-Buck Creek	Rocky Mtn. paintbrush, Lemhi penstemon, small onion, Green-bush, Idaho goldenweed	Hwy legal
74005	Ward Cr-Wheeler Cr	Rocky Mtn. paintbrush	50” or less
5638	Watchtower Cr Trailhead	Woolly-head clover, small camas	Hwy legal
468	Nez Perce Trail	Woolly-head clover, small camas, small onion, Rocky Mtn. paintbrush	Hwy legal, 50” or less
(TR) 106	Razorback Ridge	Candystick	Motorcycles
(TR) 123	Sawtooth	Sandweed	Motorcycles
(TR) 126	Bear Creek Overlook	Candystick	Motorcycles
(TR) 135	Nelson lake	Candystick	Motorcycles
(TR) 177	Warm Springs Ridge	Small onion	Motorcycles
(TR) 184	Chrandall Creek	Candystick	Motorcycles
(TR) 510	Cross Country	Candystick	Motorcycles
(TR) 598	Trapper Creek	Yerba buena	Motorcycles
(TR) 614	Blue Joint	Candystick	Motorcycles
(TR) 9	Continental Divide NST	Primrose monkeyflower	Motorcycles
10007	Benson Creek	Lemhi penstemon	50” or less
1133	Slate Creek	Rocky Mtn. Paintbrush, Hollyleaf clover	Hwy legal
1136	Larry Creek	Rocky Mtn. paintbrush	Hwy legal

Trail (TR) or Road	Name	Species	Type of Use
1260	Gibbons Pass	Candystick	Hwy legal
1303	Bare Cone	Wooly-head clover	Hwy legal
1304	French Basin	Lemhi penstemon	Hwy legal
1315	Sweeney Creek	Common clarkia	Hwy legal
1316	Lower Larry Loop	Rocky Mtn. paintbrush	Hwy legal
1321	Smith Creek	Candystick	Hwy legal
13402	Gemmel Creek-Nelson Cr	Lemhi penstemon	50” or less
13409	West Creek	Wooly-head clover	50” or less
13410	West Creek	Wooly-head clover, Hollyleaf clover	50” or less
13413	Coal Creek	Wooly-head clover, Hollyleaf clover	50” or less
13436	Ditch Creek	Rocky Mtn. paintbrush	Hwy legal
13808	Little Boulder	Hollyleaf clover	50” or less
13817	Took- Mud Ridge	Hollyleaf clover	50” or less
13829	Violet Creek	Small onion	50” or less
13837	East Piquett	Small onion	50” or less
13852	Coal Creek	Hollyleaf clover	50” or less
13854	Coal Creek	Hollyleaf clover	50” or less
13862	Sheep Creek	Lemhi penstemon	50” or less
13881	One Creek	Small onion	50” or less
13886	Mine-Chrandall	Candystick	Hwy legal
1392	Burn Road	Candystick	50” or less
310	Hughes Creek	Small onion, Rocky Mtn. Paintbrush, Hollyleaf clover	Hwy legal
321	N Frk Rye-Harlan Mtn	Lemhi penstemon	Hwy legal
370	Warm Springs-Laird	Small onion	Hwy legal
373	Barn Draw	Small onion	Hwy legal
429	Lost Horse	Sandweed	Hwy legal
446	Robbins Gulch	Lemhi penstemon	Hwy legal
49	Piquet Creek	Rocky Mtn. paintbrush	50” or less
550	Lake Como	Poor sedge, Crested shield-fern	Hwy legal
5612A	Robbins Ridge	Lemhi penstemon	Hwy legal
5626	Timber Road	Small onion	Hwy legal
5627	Fish Hook	Lemhi penstemon	Hwy legal
5629	Lloyd Creek	Small onion, Rocky Mtn. paintbrush	Hwy legal
5630	Lavene Creek	Small onion, Stalk-leaved moneyflower	Hwy legal
5632	Wheeler Creek	Rocky Mtn. paintbrush	Hwy legal
5633	Gemmel Creek	Small onion	Hwy legal
5633A	Halford-Soda Springs	Lemhi penstemon	50” or less
5635	Soda Springs	Wooly-head clover, Stalk-leaved monkeyflower	Hwy legal
5637	Flat-Beetle	Rocky Mtn. paintbrush	Hwy legal
5656	Little Blue Joint	Hollyleaf clover	Hwy legal
5658	Lit. Blue Joint-Coal Cr	Lemhi penstemon, Wolly-head clover, Hollyleaf clover, Taper-tip onion	Hwy legal
5660	Coal Creek	Wooly-head clover, Hollyleaf clover	Hwy legal
5662	South Coal	Wooly-head clover, Hollyleaf clover	Hwy legal, 50” or less
5669	Woods Creek	Lemhi penstemon, Perplexed halimolobos	Hwy legal
5676	Head of West Fork	Perplexed halimolobos	50” or less
5683	Salt Creek	Greenleaf manzanita	50” or less

Trail (TR) or Road	Name	Species	Type of Use
5685	Thunder Mtn-Johnson	Candystick, Lemhi penstemon	Hwy legal, 50” or less
5696	Lookout Mtn Ridge	Small onion, Hollyleaf clover, Rocky Mtn. Paintbrush, Lemhi penstemon	Hwy legal
5696A	Lookout Mtn	Rocky Mtn. paintbrush	Hwy legal
5706	Jew Mountain	Lemhi penstemon	All vehicles
5706A	North Side Overwhich	Rocky Mtn. paintbrush	50” or less
5719	Steep Creek	Rocky Mtn. paintbrush	50” or less
5720	Piquett-Pine Ridge	Small onion	Hwy legal
5723	Eastside Piquett	Lemhi penstemon	Hwy legal
5724	Upper Eastside Piquett	Lemhi penstemon, Small onion	Hwy legal, 50” or less
5727	Sula Peak	Small onion	Hwy legal
5734	Saddle Mountain	Primrose monkeyflower	Hwy legal
5767	Medicine Tree	Small onion	Hwy legal
5793	Mine-Crandall	Candystick	Hwy legal
5796	Pasture Draw	Lemhi penstemon	Hwy legal
62641	Whitsell Creek	Lemhi penstemon	50” or less
62648	Robbins Gulch	Lemhi penstemon	50” or less
62867	Little Trapper	Small onion	50” or less
62908	Little Trapper-Trapper	Lemhi penstemon	Hwy legal
62969	Lost Horse	Sandweed	Hwy legal
66	West Fork Bitterroot	Hollyleaf clover, Idaho goldenweed, Green-bush, Lemhi penstemon, Rocky Mtn. Paintbrush	Hwy legal
66A	Alta Campground	Hollyleaf clover	Hwy legal
720	Two Bear	Candystick	Hwy legal
725	Meadow Creek	Candystick, Primrose monkeyflower	Hwy legal
731	East Piquett	Small onion	Hwy legal
73206	Sawdust Gulch	Lemhi penstemon	Hwy legal
73264	East Fork	Western Boneset	50” or less
73288	Mink Creek	Western Boneset	50” or less
73537	E Fk Camp Cr on Divide	Candystick	50” or less
73574	East Fk Flt(Wetzsteon)	Small onion	Hwy legal
73994	Lost Trail Pass	Primrose monkeyflower	Hwy legal
74004	Nelson Cr-Gemmell Cr	Lemhi penstemon	50” or less
74019	Soda Springs Creek	Small onion	50” or less
74021	Soda Springs Creek	Lemhi penstemon	50” or less
74038	Nez Perce-Watchtower	Wooly-head clover	Hwy legal
74098	Took Creek	Hollyleaf clover	50” or less
74120	Took Creek	Hollyleaf clover	50” or less
74135	Little Blue Joint	Hollyleaf clover	Hwy legal
74137	Coal Creek	Hollyleaf clover	50” or less
74139	Coal Creek	Hollyleaf clover	Hwy legal
74141	Coal Creek	Hollyleaf clover, Lemhi penstemon	50” or less
74161	Coal Creek	Hollyleaf clover	50” or less
74166	Hughes Creek	Hollyleaf clover, Lemhi penstemon	50” or less
74167		Hollyleaf clover, Lemhi penstemon	50” or less
75	Skalkaho-Rye	Small onion	Hwy legal
91	West Fork	Small onion, Rocky Mtn. Paintbrush, Lemhi penstemon	Hwy legal

Trail (TR) or Road	Name	Species	Type of Use
(TR)-SCOP-20	Trail 104 Extension	Candystick	Motorcycles
(TR)-SCOP-46	Proposed Lookout Ridge ATV Trail	Rocky Mtn. paintbrush	Proposed 50" or less
(TR)-SURD-03	Elk Pt., extends TR-SURD-05 to SW	Small onion	50" or less
Total Number of Motorized Routes with Rare Plant Occurrences			**148**

The table shows that **Alternative 3** would have 148 routes with rare plant occurrences along them. This compares to 139 routes under **Alternative 2**.

There are routes proposed to be added to the motorized trail/road system in **Alternative 3.** Some of these proposed routes have known rare plant locations. However, constructing new trail will increase the risk of spreading invasive plants which could adversely impact rare plant habitat, if present. New construction will be subject to separate NEPA analysis and decisions.

Effects on rare plants will be the similar to **Alternative 2**, since the number of routes with rare plant occurrences is close to being the same. However, there are about 82 miles more of routes, primarily trails, proposed to be open to motorized use in this alternative, as compared to **Alternative 2,** so there is a greater likelihood of adverse impacts to rare plants or rare plant habitat.

Alternative 3 proposes to designate 35 miles of unauthorized routes on the MVUM. About 19 miles, including TR-SURD-03 in Table 3.9-5, would be proposed to be designated as ATV trails seasonally; approximately 1 mile would be designated to be open yearlong. Some of these routes would connect existing roads.

About 10 miles of the routes proposed to be designated for ATVs would not be shown on the MVUM until separate site-specific NEPA analysis and decisions, associated with relocating the routes to more sustainable locations to address rutting and erosion concerns are completed and they exist on the ground. One of these routes, TR-SCOP-46, is listed in Table 3.9-5.

Under **Alternative 3**, 14 miles of unauthorized routes, including TR-SCOP-20 in Table 3.9-5, would be proposed to be designated seasonally for use by motorcycles, and 1 mile would be designated for yearlong use {Project File folder 'unauthorized_trails,' Project File document UAT-004.pdf}.

For a listing of the unauthorized routes proposed to be designated on the MVUM in **Alternative 3**, please refer to Appendix K to the FEIS.

Alternative 3 would allow motorized wheeled access for dispersed camping within 300 feet on either side of a designated route; corridors would be extended to those sites identified on the maps of the alternatives.

Alternative 4

Table 3.9-6 lists the routes which have rare plants located along them, along with the species and type of motorized use.

Table 3.9- 6: Rare Plant Species Located Along Routes in Alternative 4

Trail (TR) or Road	Name	Species	Type of Use
374A	Hart Bench Loop	Small onion	Hwy legal
(TR) 627	Castle Rock (East)	Simil onion	Motorcycle
5694	Taylor Hookup	Rocky Mtn. Paintbrush, Lemhi penstemon	50” or less
5693	Taylor Creek	Rocky Mtn. paintbrush	Hwy legal
5715	Ditch-Buck Creek	Rocky Mtn. paintbrush, Lemhi penstemon, small onion	Hwy legal
106	Bitterroot-Big Hole	Small onion, Rocky Mtn. paintbrush	Hwy legal
5638	Watchtower Cr Trailhead	Woolly-head clover, small camas	Hwy legal
468	Nez Perce Trail	Woolly-head clover, small camas, Rocky Mtn. Paintbrush, small onion	Hwy legal, 50” or less
(TR) 510	Cross Country	Candystick	Motorcycles
10007	Benson Creek	Lemhi penstemon	50” or less
1133	Slate Creek	Rocky Mtn. paintbrush	Hwy legal
1136	Larry Creek	Rocky Mtn. paintbrush	Hwy legal
1260	Gibbons Pass	Candystick	Hwy legal
1304	French Basin	Lemhi penstemon	Hwy legal
1315	Sweeney Creek	Common Clarkia	Hwy legal
1321	Smith Creek	Candystick	Hwy legal
13404	Northside Hughes Creek	Rocky Mtn. paintbrush	Hwy legal
13436	Ditch Creek	Rocky Mtn. paintbrush	Hwy legal
310	Hughes Creek	Small onion, Hollyleaf clover	Hwy legal
321	N Frk Rye-Harlan Mtn	Lemhi penstemon	Hwy legal
362	Blue Joint	Hollyleaf clover, Small onion, Rocky Mtn. paintbrush	Hwy legal
370	Warm Springs-Laird	Small onion	Hwy legal
446	Robbins Gulch	Lemhi penstemon	Hwy legal
5612A	Robbins Ridge	Lemhi penstemon	Hwy legal
5629	Lloyd Creek	Rocky Mtn. paintbrush	Hwy legal
5632	Wheeler Creek	Rocky Mtn. paintbrush	Hwy legal
5685	Thunder Mtn-Johnson	Lemhi penstemon	Hwy legal
5696	Lookout Mtn Ridge	Hollyleaf clover, Rocky Mtn. Paintbrush, Lemhi penstemon	Hwy legal
5696A	Lookout Mtn	Rocky Mtn. paintbrush	Hwy legal
5706	Jew Mountain	Lemhi penstemon	All vehicles
5706A	North Side Overwhich	Rocky Mtn. paintbrush	50” or less
5720	Piquett-Pine Ridge	Small onion	Hwy legal
5723	Eastside Piquett	Lemhi penstemon	Hwy legal
5724	Upper Eastside Piquett	Lemhi penstemon	Hwy legal
5734	Saddle Mountain	Primrose monkeyflower	Hwy legal
5767	Medicine Tree	Small onion	Hwy legal
66	West Fork Bitterroot	Hollyleaf clover, Idaho goldenweed, Green-bush, Rocky Mtn. Paintbrush	Hwy legal
66A	Alta Campground	Hollyleaf clover	Hwy legal
720	Two Bear	Candystick	Hwy legal
725	Meadow Creek	Candystick, Primrose monkeyflower	Hwy legal
73206	Sawdust Gulch	Lemhi penstemon	Hwy legal
73537	E Fk Camp Cr on Divide	Candystick	Hwy legal

Trail (TR) or Road	Name	Species	Type of Use
73574	East Fk Flat (Wetzsteon)	Small onion	Hwy legal
74038	Nez Perce-Watchtower	Wooly-head clover	Hwy legal
91	West Fork	Rocky Mtn. Paintbrush, Lemhi penstemon	Hwy legal
Total Number of Motorized Routes with Rare Plant Occurrences			**45**

The table shows that **Alternative 4** would have 45 routes with rare plant occurrences along them. This compares to 139 routes under **Alternative 2**.

Alternative 4 proposes to designate 3 miles of unauthorized routes on the MVUM. About 2 miles would be proposed to be designated as ATV trails seasonally; approximately 1 mile would be designated to be open yearlong. Several of these routes would connect existing roads.

No unauthorized trails for motorcycles would be proposed for designation in **Alternative 4**. All of the routes would be shown on the MVUM as no separate site-specific NEPA analysis would be required {Project File folder 'unauthorized_trails,' Project File document UAT-005.pdf}.

For a listing of the unauthorized routes proposed to be designated on the MVUM in **Alternative 4**, please refer to Appendix K to the FEIS.

Alternative 4 would allow motorized wheeled access for dispersed camping within 150 feet on either side of a designated route; corridors would be extended to those sites identified on the maps of the alternatives. Consequently, the impacts to rare plants or rare plant habitat would be reduced by half, compared to **Alternative 2**.

Over-Snow

Over-snow vehicle use should not have any direct effects on rare plants since they will be covered in snow and be dormant. There is some potential, however, for indirect effects through introducing or spreading invasive plants if weed seeds are present on the undercarriage of over-snow vehicles. Project design features, including public education efforts regarding the threats posed by invasive plants, and the need to clean vehicle undercarriages prior to accessing National Forest System lands, would be carried out during implementation of the Travel Management Planning Project. Refer to Chapter 2, Table 2-19 for additional information.

Summary

All alternatives would have routes designated open to motorized vehicles which have rare plants located along them. **Alternative 3** would have 148, followed by **Alternative 2** (139 routes), **Alternative 1** (126 routes), and **Alternative 4** (45 routes). As long as motorized vehicles stay on designated routes, rare plants and their habitat would not be adversely affected.

Designating unauthorized routes could result in an increase in the introduction and spread of invasive plants. Though these unauthorized routes are currently being used by motorized vehicles, the potential for invasive plants introduction and spread, which can have an adverse impact on native plant diversity, and most likely, rare plant viability, could increase when they become designated routes, and the number of vehicles using them expands as users utilize the new recreation opportunities. **Alternative 3** would designate 35 miles of unauthorized routes, followed by **Alternative 1**, 30 miles, and **Alternative 4**, 3 miles. **Alternative 2** would not designate any unauthorized routes.

Allowing motorized wheeled access to dispersed campsites has the potential to directly and indirectly impact rare plants. **Alternatives 1, 2, and 3** would allow motorized wheeled access for dispersed camping within a 300 foot corridor off of designated routes; under **Alternatives 1 and 3**, corridors would be

extended to those sites identified on the maps of the alternatives. **Alternative 4** would allow motorized wheeled access for dispersed camping within a 150 foot corridor on either side of designated routes; corridors would be extended to those sites identified on the maps of the alternatives.

Limiting motorized travel off of roads and trails beyond the 150 or 300 foot dispersed camping corridors will reduce the risk of spreading invasive plant species which impact rare plant species and rare plant habitat.

Alternatives 1, 3, and 4 would contain the prohibition against motorized wheeled access for dispersed camping within 30 feet of any flowing stream, pond, lake, marsh, or wetland; **Alternative 2** would not contain the prohibition.

Since all routes currently open to motorized use, including an undetermined number of miles of unauthorized routes used primarily by ATVs and motorcycles, will remain open in **Alternative 2**, and it would not contain the prohibition against motorized wheeled access for dispersed camping within 30 feet of any flowing stream, pond, lake, marsh, or wetland, or the limitation of the dispersed camping corridor, the overall impact on rare plants would be highest with this alternative, followed by **Alternatives 3, 1, and** 4.

C. Cumulative Effects

Geographic Boundaries

The defined cumulative effects analysis area for rare plants is the same as the project area; the portion of the Bitterroot National Forest outside of Designated Wilderness. This analysis area is appropriate to analyze any incremental effects from the actions of this project, in combination with past, present, and reasonably foreseeable activities, because effects of implementing travel planning decisions on the Bitterroot National Forest would be negligible to rare plants outside this analysis area.

Activities Within the Cumulative Effects Analysis Area

Past actions have contributed to the existing condition for rare plants, which is described in Section 3.9.3 (Affected Environment). The construction of National Forest System roads associated primarily with timber harvest projects, and activities associated with timber harvest, have resulted in adverse effects to the Rare Plants resource which are ongoing.

Appendix A to the FEIS describes past, present, and reasonably foreseeable forest and other activities, which, when combined with the activities proposed in the Travel Management Planning Project, could result in cumulative effects to rare plants. The Worksheet for Consideration of Cumulative Effects to Rare Plants has been completed and is included as {Project File folder 'rare plants,' Project File document RARE-PLANTS-003.pdf}.

Also, please refer to the Cumulative Effects analysis for Invasive Plants (Chapter 3, Section 3.10.4 C) for additional information, as invasive plants introduction and spread has had a substantial impact on native plant diversity and, most likely, rare plant viability.

Summer

Most forest activities have a negligible effect on rare plant habitat or populations for the following reasons:

- Ø The activity's location is not within suitable rare plant habitat;
- Ø The activity's disturbance is too small to produce an effect;
- Ø Project design features are applied to reduce the activity's effects to negligible levels;
- Ø The time elapsed and natural recovery that has occurred since project completion has diminished effects to negligible levels

Examples of forest activities which, when carried out consistent with existing regulations, result in negligible cumulative effects to rare plant habitat or populations include:

- Personal use Firewood Cutting
- Invasive Plant Management
- Cattle grazing
- Personal use Christmas tree harvesting
- Most Special Uses\Permits (excluding Outfitter and Guide Activity)
- Activities on State and Private Lands

There are other forest activities which could result in cumulative effects to rare plants:

Timber Harvest, Prescribed Burning, and Associated Activities

Timber harvest, road building, and associated activities likely impacted some rare plants and their habitat. Prior to 1989, rare plant surveys were not conducted for projects, so there is no way of knowing what impacts may have occurred. There are places on the Bitterroot National Forest where rare plants, such as hollyleaf clover, have been found growing on old skid trails and terraces. Plants are usually stunted, due to soil compaction. Roads were probably constructed bisecting rare plant populations, as seen in places where Lemhi penstemon is growing along road cuts.

Since 1989, all timber sales have or will be reviewed for possible impacts on rare plant species or habitat as required by Forest Service Manual (FSM) 2670. The population viability of any rare plant populations found since 1989 have been maintained through design criteria, mitigation, or avoidance. Very few, if any, permanent roads have been built since 1989, and any temporary roads have avoided impacts on rare plants.

Several present and reasonably foreseeable projects listed in Appendix A to the FEIS will decommission, store, or close system roads and "undetermined" status roads. In the case of some "undetermined" status roads, they may be placed on the Forest's Transportation System if the project-specific travel analysis determines they are necessary for future management. The Darby Lumber Lands Watershed Improvement and Travel Management Project proposes to place approximately 55 miles of closed roads into long-term storage, and decommission an additional 66 miles of roads. The Three Saddle Vegetation Management project will decommission approximately 9.5 miles of road, and place about 1.1 miles of road in long-term storage. The Como Forest Health Protection Project will place approximately 3.1 miles of undetermined roads in long-term storage, and will decommission about 3.5 miles of undetermined roads. The Meadow Vapor project will be proposing to decommission and place roads in long-term storage.

Decommissioning roads permanently removes them from the Forest's Transportation System, preventing motorized use by the public and Forest Service personnel. Placing roads in long-term storage would also eliminate motorized use by the public and Forest Service personnel. These actions would help prevent the introduction or spread, or both, of invasive plants across the Forest.

Road and Trail Management

Road maintenance activities have likely resulted in negative impacts to rare plants that were in areas prior to road construction and now occur in road cuts. Roadside herbicide treatments have likely impacted some rare plant species, but most roadsides where herbicide use occurs have been surveyed for rare plants. Roadside spraying is mostly done for spotted knapweed, and the concentrations of herbicide used usually do not impact most other species in the long term. Reducing the competitive effects of invasive plants is probably more critical in the long-term viability of rare plant species. However, it is still very difficult to maintain viable roadside rare plant populations due to the constant disturbances and activities occurring in these areas. Since there are very few such locations, long-term roadside impacts are not likely to adversely affect the population viability of any rare plant species. It is more important to survey any proposals for new temporary or permanent roads and avoid road building where plants are found.

Cattle Grazing

Grazing on the Bitterroot National Forest, state, and private lands contributed to the introduction and spread of invasive plants, which may have adversely impacted some rare plant populations. Prior to the Taylor Grazing Act of 1934, livestock grazing was mostly uncontrolled. After 1934, the number of livestock on public lands was drastically reduced with a permit system. Livestock can introduce invasive plants by transporting weed seed to new areas and by overgrazing native plant species which otherwise may be capable of competing with invasive plants. Currently, cattle grazing allotments on the Bitterroot National Forest are fairly small and, although noxious weed spread still occurs through livestock, it is not as large a problem as in the past. Areas on the Forest where known rare plant populations overlap with grazing allotments have been monitored, and there are currently no adverse impacts on rare plants.

Wildfire Suppression

Fire suppression activities may have impacted rare plant species and habitat in the past. Construction of dozer lines, safety zones, drop zones, and helipads can remove native and rare plants from an area. Reseeding with non-native grass species further alters a site, and can make it difficult for native and/or rare plants to resprout or reseed on their own. Retardant drops can increase invasive plant species on a site, competing with rare plants.

Current fire suppression activities tend to be lighter on the land, but impacts can still occur in an emergency situation, particularly if a safety zone needs to be constructed quickly.

Public Use

Off road vehicle use has been known to adversely impact rare plants on the Bitterroot National Forest. A small population of Lemhi penstemon in the Robbins Gulch area was heavily impacted by four wheel vehicle use on a steep hillside (personal observation). The site was permanently blocked off once the damage was discovered. There is no way of knowing how much, if any, other damage has occurred from off road use. Some of the more beautiful rare plant species may have been impacted by native garden enthusiasts transplanting plants. Horse, hiker, and camper use off trail can lead to trampling of plants. Rare plants are located at the Fales Flat Campground and trailheads on the Bitterroot National Forest. These populations seem to be thriving even with the heavy use, but there is no way of knowing what condition the populations were like in the past.

Special Uses\Permits

Special use permits are issued for outfitting\guiding, wilderness dam maintenance, mining, research studies, rock collecting or gravel pit operations, uses of Forest roads to access private lands, and other applications. Many permits, like wilderness dams, have been in effect since the late 1800s, so there is no way of knowing if rare plants were impacted by the construction of these dams. A borrow pit area near the Bass Lake Dam was found to have the local endemic, Bitterroot bladderpod, growing in it. This pit was used during a reconstruction project in 1952. Seeds from the plant may have come from known populations above the dam on St. Joseph Peak, or may have been transported by birds or animals. The Mill Lake Dam has populations of the species of interest, Bitterroot penstemon (Penstemon flavescens), growing on the dam face. This is another species endemic to the Bitterroot Mountains, and it may have been disturbed during construction of the Mill Lake Dam.

Outfitters have been using the backcountry for hunting camps for decades, and may have impacted rare plants in their camps. Any new outfitting camps are now required to be surveyed for rare plants prior to receiving a permit. Other special uses, such as ditches and road easements, may have impacted rare plant populations in the past.

Activities on State and Private Land

Activities such as timber harvest, prescribed burning, and grazing occurring on adjacent State and private lands can impact the distribution and range of some rare plant species. Other agencies and private property

owners in particular, are not always required to perform extensive field surveys for rare plants prior to conducting ground-disturbing activities. This may result in impacts on rare plants or their habitat, as well as, invasive plant introduction and spread onto National Forest System lands. Adjacent National Forests are required to review projects for impacts on rare plants and rare plant habitat.

Wildfires

Wildfire has impacted sensitive plants on the Bitterroot National Forest, and many plants are adapted to or require periodic fire. A population of candystick (which was listed as sensitive at the time) was destroyed in the 2000 fires. This plant is dependent on a living conifer host (usually lodgepole pine in the Northern Rockies) to survive. Since lodgepole pine-stands historically burned in stand-replacing fires, the impacts on candystick may be a natural part of the subalpine ecosystem and it could take many decades for trees to become mature enough to sustain candystick plants again. On the other hand, wildfire in 2000 also released a dormant Lemhi penstemon seedbank and hundreds of seedlings were seen post-fire. The same area, unfortunately, also saw a dramatic increase in spotted knapweed which is now competing for resources with Lemhi penstemon. Small onion, Great Basin Indian potato, and bitterroot populations also seem to respond positively to wildfire. They have deep taproots or bulbs that resprout following fire. The biggest concern with wildfires is the spread of invasive species that can compete with sensitive plants, especially with the more recent large-scale fire events that have occurred due to increased fuel loads and drought conditions.

Natural Disturbance Events

Floods, large wind events, and blizzards can create large areas of disturbance. Many rare plant species require disturbance to seed and/or resprout. The same events can, however, create large openings in the forest, resulting in invasive plants introductions or spread.

Over-Snow

Over-snow vehicle use should not have any direct effects on rare plants since they will generally be covered in snow and be dormant. As many roads and trails would be snow-covered during the winter months, this would limit their use by motorized vehicles, both by the public and Forest Service personnel. Consequently, forest management activities, including road and trail management, and invasive plants management, as well as activities on state and private land, would not occur. Cattle typically graze on allotments on National Forest System lands between May 15 and October, 31; they would not be grazing during winter months.

There is some potential for indirect effects through introducing or spreading invasive plants if weed seeds are present on the undercarriage of snowmobiles or other vehicles associated with public uses, such as personal use firewood cutting and personal use Christmas Tree harvesting, and special uses\permits. Project design features, including public education efforts regarding the threats posed by invasive plants, and the need to clean vehicle undercarriages prior to accessing National Forest System lands, would be carried out during implementation of the Travel Management Planning Project. Please refer to Chapter 2, Table 2-19 for additional information.

Timber harvest projects are sometimes implemented during winter months, and while rare plant surveys should have been conducted prior to project implementation, any rare plants in the project area which were not identified during surveys may be covered with snow and difficult to see. Therefore, there is the potential for adverse effects to rare plants. In the event that rare plants are identified, the Forest's Botanist would be contacted, and if necessary, the site would be buffered.

Cumulative Effects from the Implementation of the Alternatives

Alternative 1

Most of the above listed present and reasonably foreseeable actions could have cumulative effects on rare plants in combination with the activities proposed in the Travel Management Planning Project during the summer months, but not during over-snow use. However, for the most part, there would be little effect due to the requirement for surveys prior to project implementation, and the use of project design features to minimize or avoid impacts associated with motorized/mechanical transport use, including those contained in FSM 2080. Road decommissioning and placement of roads in long-term storage would have beneficial effects on rare plants.

Alternative 2

Most of the above listed present and reasonably foreseeable actions could have cumulative effects on rare plants in combination with the activities proposed in the Travel Management Planning Project during the summer months, but not during over-snow use. However, for the most part, there would be little effect due to the requirement for surveys prior to project implementation, and the use of project design features to minimize or avoid impacts associated with motorized/mechanical transport use. Road decommissioning and placement of roads in long-term storage would have beneficial effects on rare plants.

Alternative 3

Most of the above listed present and reasonably foreseeable actions could have cumulative effects on rare plants in combination with the activities proposed in the Travel Management Planning Project during the summer months, but not during over-snow use. However, for the most part, there would be little effect due to the requirement for surveys prior to project implementation, and the use of project design features to minimize or avoid impacts associated with motorized/mechanical transport use. Road decommissioning and placement of roads in long-term storage would have beneficial effects on rare plants.

Alternative 4

Most of the above listed present and reasonably foreseeable actions could have cumulative effects on rare plants in combination with the activities proposed in the Travel Management Planning Project during the summer months, but not during over-snow use. However, for the most part, there would be little effect due to the requirement for surveys prior to project implementation, and the use of project design features to minimize or avoid impacts associated with motorized/mechanical transport use. Road decommissioning and placement of roads in long-term storage would have beneficial effects on rare plants.

Cumulative Effects Finding

There would be little cumulative effects to rare plants from past, current, and reasonably foreseeable actions including timber harvest and associated activities, road and trail management, livestock grazing, wildfire suppression, public use, special use permits, and State and private land, during the summer months, in addition to the activities proposed in **Alternatives 1, 2, 3, and 4**.

The incorporation of project design features into the proposed activities, as well as in Present and Reasonably Foreseeable Activities, will help minimize the introduction and spread of invasive plants.

It should be noted that implementing **Alternatives 1, 3, and 4** would reduce the cumulative effects of past activities because many unauthorized routes would no longer be available for motorized travel, and the potential for introducing or spreading invasive plants, or both, would be reduced.

With respect to over-snow vehicle use, there could be cumulative effects to rare plants associated with personal use firewood cutting, personal use Christmas Tree harvesting, special uses\permits, and timber harvest projects, in addition to the activities proposed in **Alternatives 1, 2, 3, and 4**.

D. Determination of Effects for Rare Species

Table 3.9- 7: Rare Plant Species Biological Evaluation

SUMMARY OF CONCLUSION OF EFFECTS

Project Name: Bitterroot National Forest Travel Management Planning
District: Forest-wide

THREATENED AND ENDANGERED SPECIES						
Species	Habitat	Presence	Effects Determination			
			ALT 1	ALT 2	ALT 3	ALT 4
Howellia aquatilis Water howellia	Low elevation wetlands surround by deciduous trees.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Silene spaldingii Spalding's catchfly	Open mesic grasslands in valleys and foothills.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Spiranthes diluvialis Ute ladies' tresses	Alkaline wetlands, swales and old, meander channels.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
VASCULAR SENSITIVE SPECIES						
Species	Habitat	Presence	Effects Determination			
			ALT 1	ALT 2	ALT 3	ALT 4
Allium acuminatum Taper-tip onion	Grasslands and Ponderosa pine.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	NI MIIH
Allium parvum Small onion	Grasslands and open Ponderosa pine.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	MIIH MIIH
Arabis fecunda Sapphire rockcress	Calcareous soils.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Astragalus paysonii Payson's milk-vetch	Found in granite and sandy soils in disturbed areas such as road cuts and edges of clear cuts (ID side).	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Athysanus pusillus Sandweed	Vernally moist rocky areas.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	NI NI
Carex paupercula Poor sedge (Idaho only)	Fens and Bogs (ID side).	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	NI NI
Castilleja covilleana Rocky Mountain paintbrush	Grasslands, Ponderosa pine, and Rocky alpine.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	MIIH MIIH
Clarkia rhomboidea Common clarkia	Open Ponderosa pine stands.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	MIIH MIIH
Cypripedium parviflorum Yellow lady's slipper	Riparian areas.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Douglasia idahoensis Idaho douglasia (Idaho only)	Subalpine zones (ID side).	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI

Drosera anglica English sundew	Fens and Bogs.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Dryopteris cristata Crested shield-fern	Fens, Bogs, and Wetland areas.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	NI NI
Epipactis gigantea Giant helleborine	Riparian and Thermal sites.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Erigeron asperugineus Rough fleabane	Alpine Rocky areas.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Erigeron evermannii Evermann's fleabane	Alpine Rocky areas.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Eupatorium occidentale Western boneset	Talus sites.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	NI NI
Glossopetalon spinescens Green-bush	Granite outcrops.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	MIIH MIIH
Halimolobos perplexa Perplexed halimolobos	Grasslands, Sagebrush, and Open Ponderosa pine stands.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	NI NI
Happlopappus macronema var. macronema Whitestem goldenbush	Alpine Rocky areas.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Heterocodon rariflorum Western pearl-flower	Canyon seeps.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Idahoa scapigera Scalepod	Vernally moist rocky areas.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Mimulus ampliatus Stalk-leaved monkeyflower	Open seeps and vernally moist soil along slopes, cliffs, and streams from the valleys to the subalpine zones.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	NI NI
Mimulus nanus Dwarf purple monkey flower	Grasslands, Sagebrush, and Open Ponderosa pine stands.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Mimulus primuloides Primrose monkeyflower	Fens and Bogs.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	MIIH MIIH
Penstemon lemhiensis Lemhi penstemon	Grasslands, Ponderosa pine stands, and Sagebrush areas.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	MIIH MIIH
Penstemon payettensis Payette penstemon	Grasslands, Ponderosa pine stands, and Sagebrush areas.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Physaria humilis Bitterroot bladderpod	Alpine Rocky areas.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Pinus albicaulis White bark pine	Mixed conifer stands at treeline.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI

Saxifraga tempestiva Storm saxifrage	Alpine Vernal Rocky areas.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Scheuchzeria palustris Pod grass	Fens and Bogs.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Tonestus aberrans Idaho goldenweed	Granite outcrops.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	MIIH MIIH
Trifolium eriocephalum Woolly-head clover	Mixed conifer and Open meadows.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	MIIH MIIH
Trifolium gymnocarpon Hollyleaf clover	Grasslands, Ponderosa pine, and Doug fir stands.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	MIIH MIIH
Veratrum californicum California false hellebore	Riparian areas.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
NON-VASCULAR SENSITIVE SPECIES						
Species	Habitat	Presence	Effects Determination			
			ALT 1	ALT 2	ALT 3	ALT 4
Meesia triquetra 3-Angled threadmoss	Fens and Bogs.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Nodobryoria subdivergens Old Man's beard	Alpine rocky areas.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
VASCULAR SPECIES OF CONCERN						
Species	Habitat	Presence	Effects Determination			
			ALT 1	ALT 2	ALT 3	ALT 4
Allium columbiana Columbia onion	Found in moist swales along vernal ponds and streams in valleys.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Allium simillimum Dwarf onion	Found in meadows and grasslands in montane and lower subalpine zones in moist gravelly soil.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	MIIH MIIH
Arctostaphylos patula Greenleaf manzanita	Rocky soil in open coniferous forests in the montane zone.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	NI NI
Calamagrostis tweedyi Cascade reedgrass	Found in seral stage Douglas Fir and subalpine fir forests in the montane zone.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Carex scoparia Pointed broom sedge	Found in wet soil along rivers and sloughs in valleys.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH

Centunculus minimus Chaffweed	Vernally wet, sparsely vegetated soil found around ponds, rivers, and streams in valleys and plains.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Collomia debilis var. camporum Alpine Collomia	Found on low elevation scree, talus, and rocky slopes near valley bottoms in the montane zone.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Cyperus bipartitus Shining flat sedge	Wet gravelly shores of rivers, lakes, and ponds.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Draba daviesiae Bitterroot Draba	Found on rocky slopes and talus near or above timberline.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Erigeron linearis Linear-leaf fleabane	Dry rocky soil often found with sagebrush.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Eriogonum capistratum var. muhlickii Muhlick's buckwheat	Talus slopes, cliffs, and rocky ridges in subalpine to alpine zones.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Ipomopsis minutiflora Small-flower standing cypress	Fine textured soils, in sparsely vegetated open slopes with sagebrush.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Juncus covillei Coville's rush	Variety *covillei* found in moist, gravelly, or sandy soil along major water courses in valley zones. Variety *obtusatus* found in moist to wet, seepy soil of slopes and meadows in montane and subalpine zones.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Lewisia columbiana Columbian Bitterroot	Moist rock crevices along streams.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	MIIH MIIH
Listera borealis Northern twayblade	Grows in seepy, marshy places along cold-air drainages, often where calcareous soils exist.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Mimulus floribundus Floriferous monkeyflower	Moist to wet places in lower elevations.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Najas guadalupensis Guadalupe water-nymph	Submerged in shallow freshwater of sloughs, ponds, and reservoirs in valleys.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI

Pedicularis contorta var. rubicunda Selway coil-beaked lousewort	Ridgetops and meadows in the upper subalpine and alpine zones.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Penstemon flavescens Yellow beardtongue	Open or wooded, often rocky slopes in mountains.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Ribes triste Swamp red currant	Forest openings in moist soil in montane to subalpine zones.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Rotala ramosior Toothcup	Open, wet, gravelly soil around ponds and sloughs in the valley zones.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Satureja douglasii Yerba buena	Found in partial to deep shade in moist forests in the montane zones.	SPECIES: Yes HABITAT: Yes	NI NI	NI NI	MIIH MIIH	NI NI
Wolffia columbiana Columbia water-meal	Fresh shallow ponds and sloughs in valleys.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
NON-VASCULAR SPECIES OF CONCERN						
Species	Habitat	Presence	Effects Determination			
			ALT 1	ALT 2	ALT 3	ALT 4
Dicranum acutifolium Acuteleaf Dicranum moss	Found in calcareous soils, on boulders, and rock outcrops.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Grimmia incurva Curved dry rock moss	Moist rock.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Hennediella heimii Heim's Desmatodon Moss	Found on moist saline or alkaline soils near streams or lakeshores.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Lobaria linita Cabbage lungwort lichen	Montane to alpine habitats. Found on alpine sod or mossy rocks.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Normandina pulchella Elf-ear lichen	Found on bark and mosses in moist habitats.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Orthotrichum praemorsum Orthotrichum moss	Found on rock.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Parmeliella triptophylla Lead lichen	Found in moist habitats on tree bases and rocks.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Peltigera hydrothyrid Hydrothyria lichen	Found on rocks and gravel in mountain streams and springs without seasonal fluctuations.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI

Phascum cuspidatum Toothed Phascum moss	Found on dry soil in open areas among grasses or shrubs .	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Psuedocrossidium obtusulum Pseudocrossidium moss	Found on soil and calcareous outcrops 90 - 3,300 ft.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Ramalina obtusata Hooded Ramalina lichen	Found on tree and shrub bark in low elevation riparian forests	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Sphagnum magellanicum Magellan's peatmoss	Found along the edges of bogs or fens.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Syntrichia bartramii Bartram's tortula moss	Found on dry soil and rocks in mid to high elevations.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Syntrichia papillosissima	Found on dry soil and rocks in mid to high elevations.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Wolffia columbiana Columbia water-meal	Fresh shallow ponds and sloughs in valleys.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
FERN AND FERN ALLIES SPECIES OF CONCERN						
Species	Habitat	Presence	Effects Determination			
			ALT 1	ALT 2	ALT 3	ALT 4
Botrychium lunaria Common moonwort	Montane meadows and grasslands in disturbed sites from low to moderate elevations.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Botrychium pinnatum Northern moonwort	Wet to moist grassy slopes, streambanks, roadsides, and mossy woods in mountains. In Idaho found in shaded cedar forests.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
Botrychium simplex Least moonwort	Montane meadows and grasslands in disturbed sites from low to moderate elevations.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Polystichum scopulinum Mountain holly-fern	Moist rock crevices in subalpine zones or on moist rocks along rivers in valleys.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI

POTENTIAL SPECIES OF CONCERN						
Species	Habitat	Presence	Effects Determination			
			ALT 1	ALT 2	ALT 3	ALT 4
Allotropa virgata Candystick	Lodgepole stands.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	MIIH MIIH
Linanthus nuttallii Nuttall's linanthus	Open soil in grasslands and on rock outcrops.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Synthyris missurica Western Mountain Kittentails	Open Forests and rocky ridges in montane and subalpine zones.	SPECIES: Yes HABITAT: Yes	MIIH MIIH	MIIH MIIH	MIIH MIIH	MIIH MIIH
Umbilicaria havaasii Rock Tripe lichen	On siliceous rock.	SPECIES: No HABITAT: No	NI NI	NI NI	NI NI	NI NI
FOREST SPECIES OF INTEREST						
Species	Habitat	Presence	Effects Determination			
			ALT 1	ALT 2	ALT 3	ALT 4
Camassia quamash Small camas	Found in wet meadows and along streams.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Lewisia pygmaea var. nevadensis Nevada lewisia	Moist meadows and Open forests.	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH
Lewisia rediviva var. rediviva Bitterroot	Rocky Open Dry Soils	SPECIES: No HABITAT: Yes	NI MIIH	NI MIIH	NI MIIH	NI MIIH

NI = No Impact
MIIH = May Impact Individuals or Habitat, but will not likely result in a trend toward Federal listing or reduced viability for the population or species
LIFV = Likely to Impact Individuals or Habitat with a consequence that the action may contribute towards Federal listing or result in reduced Viability for the population or species (This determination triggers a significant action)
BI = Beneficial Impact

Prepared by: /s/Robin Taylor-Davenport Date: December 12, 2012
ROBIN TAYLOR-DAVENPORT
Bitterroot Forest Botanist

3.9.5 CONSISTENCY WITH THE FOREST PLAN, LAWS, AND REGULATIONS

The Travel Management Planning Project is essentially a planning effort, and does not create new ground disturbance. As such, consistency with existing regulation is a matter of incorporating various concerns into the planning effort. This has been done in all phases of the project.

A. Bitterroot National Forest Plan

Consistency with the Bitterroot National Forest Plan forest-wide resource standards applicable to rare plants would be accomplished the following ways.

Forest-wide Management Standards

No formal recovery plan has been established for threatened and endangered species on the Bitterroot Forest. Specific population objectives will be established when sufficient biological information is available to do so. Cooperate and involve the Public in any interagency recovery effort (USDA Forest Service, 1987a, II-21).

How addressed:

While there is suitable habitat for threatened and endangered plant species on the Bitterroot National Forest, there are currently no known documented occurrences. In the absence of plants, there is no need for a formal recovery plan.

Participate in the identification and protection of threatened and endangered species and vascular plants identified as rare, pending study and proposal as threatened or endangered (USDA Forest Service, 1987a, II-21).

How addressed:

A botanist field reviewed existing site conditions on system routes and unauthorized routes with potential rare plant concerns in all alternatives {Project File folder 'field_review_notes_tes_plants,' Project File document FR-NOTES-PLANTS-001.pdf}. Utilizing this data, the botanist was able to determine necessary closures or modifications of routes to protect rare plants.

The plants termed 'rare' are the plants on Region 1's Sensitive Species List, as well as any plants identified by the Forest as being of "special interest or concern." Stated goals of Forest Service policy are to maintain the population viability of sensitive species over their geographic range, implement management practices, to ensure that sensitive species do not become threatened or endangered because of Forest Service actions, and minimize impacts to all species whose viability has been identified as a concern (FSM 2670.22 and 2670.32). Information on the number of plants required for maintenance of viable populations is not available. Therefore, a conservative approach is required when determining the effects of management activities.

Rare plant populations and their habitat would be protected by the effective implementation of project design features including public education efforts regarding the threats posed by the introduction and spread of invasive plants, and the use of emergency and standard orders to close roads, trails, and dispersed campsites which are contributing to impacts to rare plants (FEIS, Chapter 2, Table 2-19). The proposed activities in all alternatives would be consistent with the Bitterroot National Forest Plan to reduce the risk of further weed spread. Further protection for rare plants and their habitat would be afforded by containing most motorized use to designated roads and trails. Illegal, off-road use may adversely impact rare plants and rare plant habitat. Any new proposed routes would be surveyed for rare plants prior to construction.

Limiting motorized travel off of roads and trails beyond the 150 or 300 foot dispersed camping corridors will reduce the risk of spreading invasive plant species which impact rare plant species and rare plant habitat. Most sites that have desirable campsite characteristics have already been established by repeated use, limiting future increases in the number of motorized routes to access them. Expansion of new and

existing sites is expected, but would likely be limited by terrain features including standing and down trees, large rocks, thick vegetation, water features, narrow stream canyons, and abrupt topographic changes. Existing dispersed sites typically have a suitable motorized access route commonly used to get to the site. The Forest has a continuing program of installing barriers to limit vehicle access or gravelling defined access routes where needed to reduce streamside impacts. The Forest will continue to monitor the emergence of new dispersed camping sites that are accessed by motorized vehicles, as well as changes at existing sites. Sites where motorized access routes result in excessive effects to rare plants will be altered or closed.

All alternatives would be in compliance with applicable forest-wide Forest Plan standards and Forest Service policy.

Management Area Standards

There are no Forest Plan management area standards pertaining to rare plants.

All alternatives are consistent with the National Forest Management Act of 1976 (NFMA) requirements (used in the Bitterroot National Forest Plan) to maintain minimum viable populations of all existing native plant species. The NFMA, as amended, directs the Forest Service to provide for diversity of plant and animal communities, and requires the development and implementation of a resource management plan for a national forest.

B. Endangered Species Act

All alternatives are consistent with the Endangered Species Act. None of the proposed activities in any alternative would impact threatened or endangered plant species, since there are no threatened or endangered plant species known to occur on the Bitterroot National Forest, nor were any found during Forest Service inventory work over the last twenty years.

All alternatives would be in compliance with the Endangered Species Act.

3.9.6 CHANGES BETWEEN DRAFT EIS AND FINAL EIS

- Minor grammatical edits were made to correct typographical errors improve readability.
- Changed the name of the resource from Threatened, Endangered, and Sensitive Plants to Threatened, Endangered, and Sensitive Plants, Species of Concern, and Forest Species of Interest (Rare Plants) to more accurately reflect the scope of the analysis.
- Section 3.9.1 (Scope of Analysis and Analysis Methods). Deleted the measurement indicator, the acres of potentially-suitable habitat within dispersed camping areas that could be impacted, as it did not contribute much to the analysis; the analysis only considered impacts to five dispersed camping areas.
- Section 3.9.3 A (Affected Environment), Table 3.9-1. Changed the name of the table from "Sensitive Plants in or Near the Analysis Area" in the DEIS to "Rare Plants Species in the Analysis Area) in the FEIS. Added Diamond clarkia *(Clarkia rhomboidea),* Dwarf onion *(Allium simillimum),* Candystick (*Allotropa virgate*), Greenleaf manzanita (*Arctostaphylos patula*), Small camas (*Camassia quamash*), Columbia lewisia (*Lewisia columbiana*), Bitterroot (*Lewisia rediviva var. rediviva*), Stalk-leaved monkeyflower (*Mimulus ampliatus*), and Yerba buena (*Satureja douglasii*) to the species list based on regional and state direction. Deleted Great Basin Indian-potato (*Orogenia linearifolia*), Yellow lady's-slipper (*Cypripedium parvilflorum*), English sundew (*Drosera anglica*), Giant helleborine (*Epipactis gigantea*), California false hellebore (*Veratrum californicum*), Pod grass (*Scheuchzeria palustris*), Western pearl-flower (*Heterocodon rariflorum*), Scalepod (*Idahoa scapigera*), Three-angled threadmoss (*Meesia triquetra*), Dwarf purple monkeyflower (*Mimulus primuloides*), and Payette penstemon (*Penstemon payettensis*) to the species list based on regional and state direction.
- Section 3.9.3 B. Changed the heading from Species of Interest to Species of Concern

- Section 3.9.3 C. Added Forest Species of Interest
- Section 3.9.4 B (Direct and Indirect Effects). Edits to Tables 3.9-3, 3.9-4, 3.9-5, and 3.9-6 to reflect changes in the alternatives. Deleted Tables 3.9-4 and 3.9-8 as they did not contribute to the analysis; they only showed the impacts to five dispersed camping areas.
- Added clarification about the dispersed campsite analyses: acres noted include the routes used to access dispersed campsites, as well as a 150/300 foot corridor on either side of access route.
- Section 3.9.4 C (Cumulative Effects). Effects associated with over-snow vehicle use were added.
- Section 3.9.4 D (Determination of Effects for Rare Species). Renamed Table 3.9-9 as Table 3.9-7. Added Diamond clarkia *(Clarkia rhomboidea)* to Table 3.9-7 (Sensitive Plant Species biological evaluation), and deleted Great Basin Indian-potato (*Orogenia linearifolia*) based on changes to the Bitterroot National Forest's Sensitive Plant List.
- Section 3.9.5 (Consistency with Forest Plan, Laws, and Regulations). Rewritten to provide clarity and organization.